

Paragon

Administrator's Installation and Operation Guide



Expert Solutions for the LAN Environment™

Paragon

Administrator's Installation and Operation Guide



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FCC Information

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential environment may cause harmful interference.

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1. INTRODUCTION

Paragon Features

- 1U design supports 8 users, 32 computers
- Expand to 16 users with Raritan's UKVMP2 or CIM-PAC8R
- Expand to 32 users with Raritan's HUBPAC8R
- Cascade Matrix Switching Units to expand to 2,048 servers
- Optional 19" rack mounting brackets
- Locate users and computers up to 1,000 feet apart
- Simple plug and play, auto-configure installation
- Hot-swappable components with no impact on server operation
- Platform-specific CIMs for PS/2, Sun, USB, ASCII/serial devices
- User Station supports both PS/2 and Sun keyboards
- Supports high-resolution video—to 1600 x 1200
- Powerful, intuitive on-screen user interface for simple operation
- Customized user profiles—up to 127
- Flexible, multi-level security for authorized computer access
- Three system operation modes—private, public, and share
- Flash firmware upgrades
- PC Windows program to maintain Paragon database offline
- OSUI support for IBM x330 with C2T technology
- Add remote access over IP or modem with Raritan's TeleReach™
- Seamless compatibility with Raritan's MasterConsole MXU2 and Z-Series 4200U

Paragon System Components

Paragon consists of 3 components (Figures 1, 2, & 3) connected with Category 5e UTP cable.



Figure 1. UMT8 Matrix Switching Unit

Provides 8 X 32 KVM switching.



Figure 2. Computer Interface Module (CIM)

Located at each computer. Contains transmitter for Category 5e signals & programmable ID memory for auto-configuration. See **Appendix L: Specifications** for a complete description of Computer Interface Modules (CIMs).



Figure 3. UST1 User Station

Local user console.
Connections for User Console keyboard, monitor, and mouse and RJ45 connection to UMT8.

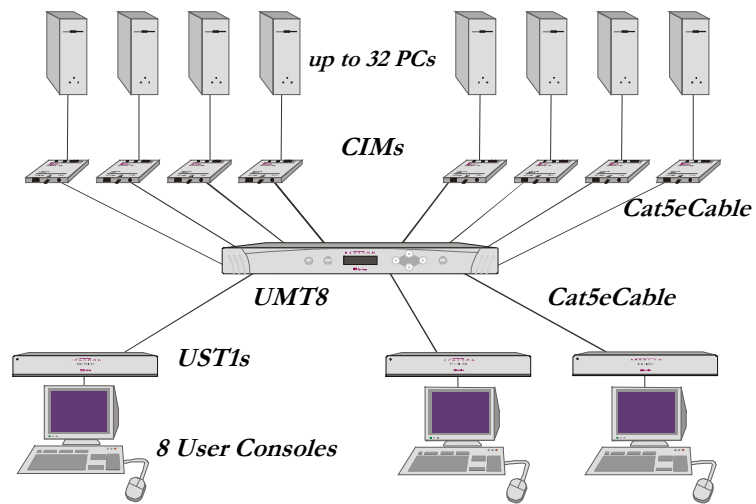


Figure 4. Basic Paragon Configuration

Each Paragon UMT8 Switch ships with:

- Two 30 feet Category5e UTP test cables (Part # UCC030)
- Administrator's Installation and Operation Guide
- AC Power Cord
- Video terminator (Part # VT100) – *Install on the upper expansion port on back of UMT8*

Each UST1 Paragon User Station ships with:

- 1 User's Manual
- AC Power cord
- Monitor AC power extension cord

2. IMPORTANT CABLE INFORMATION

Raritan certifies the following Category 5e UTP and Category 6 UTP cable products for use with Paragon:

Certified Cables for Use with Raritan Products

Category 5e UTP Cable:	Belden DataTwist 350 UTP	#1700A	Solid
	Belden DataTwist 350 patch	#1752A	Stranded
Category 6 UTP Cable:	Belden MediaTwist	#1872A	Solid

Use of non-certified cabling can result in video and data degradations that users may find unsatisfactory. Certified Raritan cable products listed above are widely available and competitively priced. When using certified cable, users can transmit video signals at distances up to 1,000 feet at 1024x768 @75Hz; and up to 600 feet at 1600x1200 @75Hz.

Note: Raritan does not have any marketing relationship with Belden, nor does Raritan receive any financial incentive for recommending Belden products.

Category 5e Unshielded Twisted Pair (UTP) Cable Mod Plug Requirements For use with Raritan Category 5e UTP Products

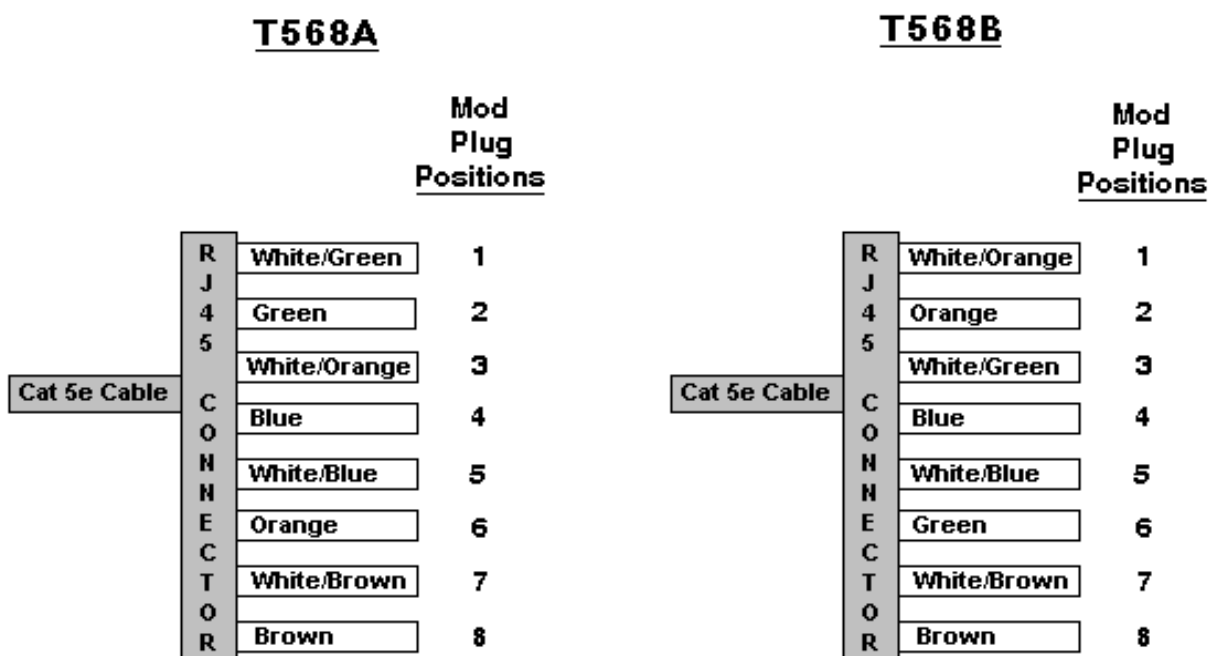


Figure 5. Cable Pin-out Requirements

See **Appendix K: UTP Cabling FAQs** for more information on Raritan certified cables.

3. INSTALLATION

Quick Start

Note: All computers and Paragon components must be powered OFF prior to installation.

Physical Connections:

1. Connect power cord to the Matrix Switching Unit (UMT8). Power ON UMT8.
2. Connect VT100 Terminator into top Expansion Port on back of UMT8.
3. Connect one end of a Category 5e UTP cable to User Port # 1 on back of UMT8. Connect the other end of cable to RJ45 Cat5 Port on back of UST1.
4. Connect power cord to User Station (UST1). Power ON UST1.
5. Connect a PS/2 keyboard, mouse and VGA monitor to UST1. Power ON monitor.
6. Connect one end of a Category 5e UTP cable to Channel Port #1 on back of UMT8 (1-32). Connect the other end of cable to RJ45 port on a Computer Interface Module (CIM).
7. Connect CIM to server's keyboard, video, and mouse ports.
8. Power ON Server.

Administrative Setup:

9. A Login Menu is displayed at the User Console attached to the UST1. In the user name field type "admin" (all in lower case). Press **Enter**>. In the password field type "raritan" (all in lower case). Press **<Enter>**.
10. The monitor displays an On-Screen User Interface (OSUI) **Selection Menu** with the connected computer displayed in green.
11. Use **<↑>** or **<↓>** keys to highlight the green channel and press **<Enter>**.
12. Normal computer access and operation indicates a successful connection.

Note: A video gain adjustment is available to "focus" the video image (especially when using LCD flat panel monitors). Activate the OSUI—hit the **<ScrollLock>** key twice rapidly—using numeric keypad "+" and "-" keys, adjust the video image until it appears "in focus."

For complete installation instructions see the rest of this section — **3. Installation** — or repeat the above steps with all purchased UST1 and CIM units.

Default Administrator's User Name and Password

Default Administrator's User Name: admin

Default Administrator's Password: raritan (typed in lower case)

Note: **User Names:** If user names have not been assigned, the default is "user01" through "user07" for users, and "admin" for the administrator. **User names are not case sensitive.**

Passwords: If a password is necessary, you will be prompted to enter one. The administrator's password is "raritan" typed in lower case. **Passwords are case sensitive.**

Configuration Options

Basic Installation: 8 users access 32 computers.

Multi-Tier Installation: Tier multiple Paragon UMT8s, or other Raritan switches, for expanded access. (up to one base and two tier levels)

Installation requires basic operation of Paragon’s On-Screen User Interface (OSUI) menus. The OSUI is activated by rapidly hitting the default **Hot Key** activator — the **<ScrollLock>** key — twice.

Each OSUI menu contains the following sections (Figure 6):

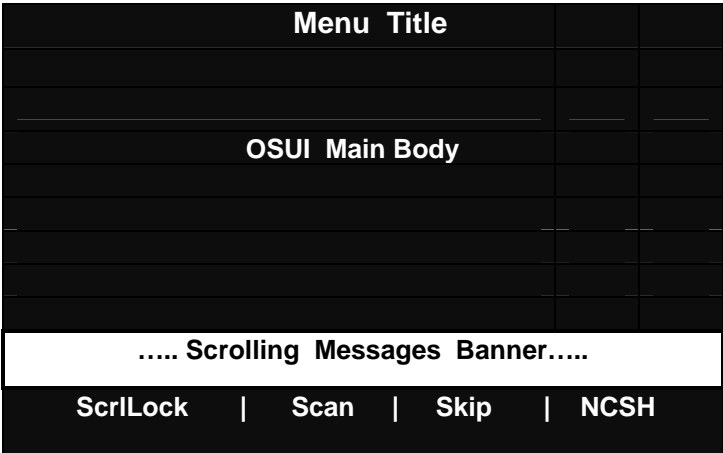


Figure 6. OSUI Display

- Title Line
- Menu/Screen Body (for text and fields)
- Scrolling Messages Banner
- Status Line—current OSUI hot key activator; Scan/Skip status; and NumLock, CapsLock, ScrollLock Keys (NCS) status indicator, plus a speed indicator (L or H) — showing the communication speed between UST1 and UMT8. Depending upon the version of your Paragon components, communication will be at a low speed (10 megabit), with the L indicator lit; or at high speed (100 megabit), with the H indicator lit.

Function keys **<F1>**, **<F2>**, **<F4>** and **<F8>** are used to switch among first-level menus. Pressing **<F1>** while OSUI is active invokes the Help Screen, which details all available options. Whenever the OSUI is invoked, the user console keyboard’s **<ScrollLock>** LED indicator blinks.

Section **4. Operating Paragon** provides a more detailed explanation of Paragon’s OSUI.

Note: Recommended maximum distance from a user console (UST1) to computer (CIM) is 1,000 feet.

Basic Installation

8 users access 32 computers (Figure 4) through a single UMT8 Paragon Matrix Switching Unit.

Note: All computers and Paragon components must be powered OFF prior to installation.

1. INITIALIZE MATRIX SWITCHING UNIT (UMT8):

- Connect power cord to the Matrix Switching Unit (UMT8). Power ON UMT8.
- Connect VT100 Terminator into top Expansion Port on back of UMT8.

Note: Installing the VT100 adapter into the top Expansion Port on the back panel of the UMT8, will improve video quality. A VT100 should be installed on each UMT8 in your configuration.

Note: Paragon's Matrix Switching Unit Expansion Ports exemplify Raritan's dedication to future development. While these Expansion Ports are currently non-functional, they reserve a location for the future implementation of Raritan Banking Technology, a potentially improved KVM configuration design that conceivably banks or links Matrix Switching Units directly to each other.

- Wait for self-testing (visible on the UMT8 front panel LCD) to complete. Unit is ready when first line of LCD on front of UMT8 circulates the message **"Raritan Computer Paragon: UMT8 HWII/1Ready"** (Figure 7). **"1"** refers to the UMT8 main unit.



Raritan Computer Paragon: UMT8 HWII/1Ready
User 1 Chan. 1

Figure 7. LCD Normal Display

2. CONNECT USER STATION (UST1):

- Connect one end of a Category 5e UTP cable to User Port # 1 on back of UMT8 (Figure 9). Connect the other end of cable to RJ45 Cat5 Port on back of UST1 (Figure 8).
- Connect power cord to User Station (UST1). Power ON UST1.
- Connect a PS/2 keyboard, mouse and VGA monitor to UST1. Power ON monitor.



Figure 8. UST1 Back Panel

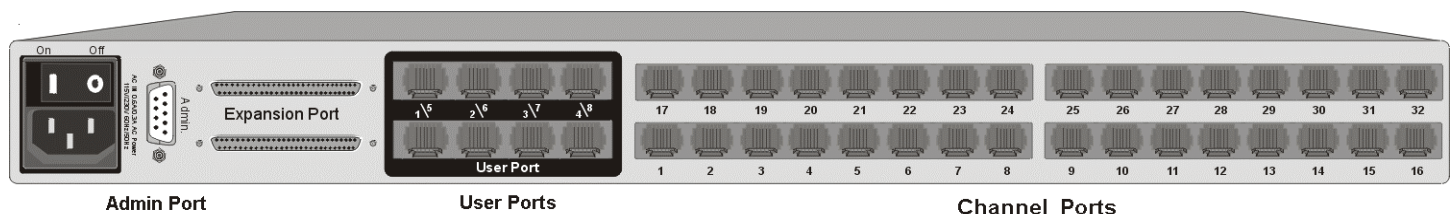


Figure 9 UMT8 Back Panel

3. PERFORM UST1 ADMINISTRATIVE SETUP:

- UST1 will establish communication with UMT8.
- A **Login Menu** (Figure 10) displays on user console monitor. Blinking **<ScrollLock>** LED on keyboard indicates **Hot Key** mode is operational, which enables keyboard's communication with Paragon OSUI for performing login, computer selection or administrative functions.

Please Login Paragon	
Device ID :	UMT8 HWII
User Port :	1
User Name :	<input type="text"/>
Password :	<input type="password"/>
..... Scrolling Messages Banner.....	

Figure 10. Login Menu

Note: If user console monitor displays a message “.....No Connection to Paragon” UST1 is not properly connected to UMT8. Check for loose connections and use only the recommended Category 5e UTP cables — see **Appendix K: UTP Cabling FAQs**.

- At the **Login Menu** (Figure 10) — Type “*admin*” in the user name field. Press <Enter>. In the password field type the default password “*raritan*” (all in lower case). Press <Enter>.
- The monitor displays the **OSUI Selection Menu** (Figure 11), indicating correct installation of UST1.

4. **REPEAT STEPS 2 AND 3 FOR EACH UST1 TO BE CONNECTED (MAXIMUM OF 8).**

Selection Menu			
UMT8 HWII			Page 1/4
No	Ch. ID	Name	Scn
1	01		03
2	02	NT4.0 Mail	03
3	03	Wins95.Bob	03
4	04	▶ Wins98.Jack	03
5	05	MX4-Wing.2	--
6	06	NT4.0-Fax	03
7	07	MC2-16.Reg1	--
8	08	UMT8-Wing.4	--
..... Scrolling Messages Banner.....			
ScrlLock Scan Skip NCSL			

Figure 11. Selection Menu

5. **CONNECT CIM:**

- Connect CIM to server’s keyboard, video, and mouse ports. Part no. APSAT for AT-style PCs if needed (Figure 12). Power on computer. Blinking green LED on CIM indicates proper functioning.

Note: See **Appendix L: Specifications** for available CIM types, functions and any special installation instructions that apply for each CIM unit.

- Connect one end of a Category 5e UTP cable to Channel Port #1 on back of UMT8 (1-32). Connect the other end of cable to RJ45 port on a Computer Interface Module (CIM).
- Power ON server.

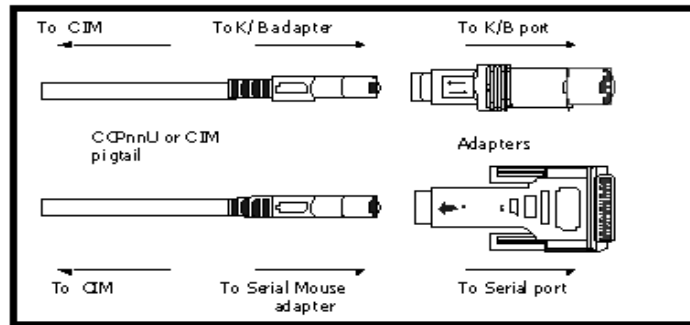


Figure 12. APSAT – Converts AT style Keyboard and Mouse to PS/2

6. PERFORM ADMINISTRATIVE SETUP FOR CIMS & CONNECTED COMPUTERS:

- The monitor connected to the UST1 displays an On-Screen User Interface (OSUI) **Selection Menu** with the connected computer displayed in green.
- Use <↑> or <↓> keys to highlight the green channel and press <Enter>.
- Normal computer access and operation indicates a successful connection.

Note: A video gain adjustment is available to “focus” the video image (especially when using LCD flat panel monitors). Activate the OSUI—hit the <ScrollLock> key twice rapidly—using numeric keypad “+” and “-” keys, adjust the video image until it appears “in focus.”

Note: It is recommended to enter a meaningful name for each channel (computer) at this time.

1. Press <F5> for **Administration Menu** (Figure 13). Select **Channel Configuration** submenu with <↑> or <↓> keys and <Enter>.
2. **Channel Configuration Menu** (Figure 14). Press <↑> or <↓> to highlight (in yellow) Name field for channel ID where CIM/computer was just installed. Press <Enter>. Highlight turns light blue.
3. Edit name (turns green when typing begins). Press <Enter> when completed. Press <S> to save new name.
4. Press <F2> to return to **Selection Menu**. Verify that new name appears on **Selection Menu** in green.

7. REPEAT STEPS 5 AND 6 FOR EACH CIM/COMPUTER DESIRED (UP TO 32).

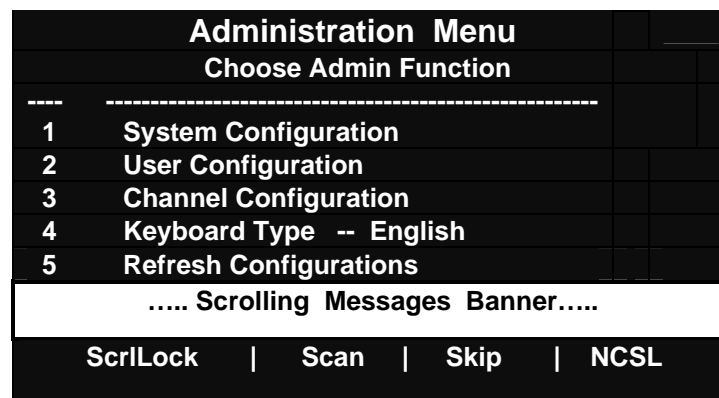


Figure 13. Administration Menu

Channel Configuration		3/4	→
Page:		Scn	Device
Ch ID	Name		
1		03	CPU
2	NT4.0 Mail	03	CPU
3	Wins95.Bob	03	CPU
4	Wins98.Jack	03	CPU
5	MX4-Wing.2	--	
6	NT4.0-Fax	03	CPU
7	MC2-16.Reg1	--	
8	UMT8-Wing.4	--	
..... Scrolling Messages Banner.....			
ScrlLock Scan Skip NCSL			

Figure 14. Channel Configuration

Multi-Tier Installation

Paragon's channel capacity can be easily expanded with a tiered installation (Figure 15). With two tiers the base unit will be the UMT8 and the second tier can be any of a multitude of Raritan KVM Switches. Up to 3 tiers are possible. However, in a 3 tier configuration the second and base tier must both be UMT8s, enabling the third tier to be any of a multitude of Raritan KVM Switches. Raritan KVM Switches that can be tiered off a Paragon unit include—other Paragon UMT8s, Z-Series Z4200U, MasterConsole MX⁴, MasterConsole MXU2, and MasterConsole II (Model MCC). Only computers may be connected to channel ports of the final tier KVM switches. Up to 2,048 computers can be accommodated with a multi-tier installation. A base plus two levels of tiered KVM is the maximum.

Note: In multi-tier configurations, the last tier switches must be powered ON before the intermediate level of tier switches, and then the base UMT8 is powered ON. User Stations (UST1s) can be powered ON and OFF at any time as needed—there is a 5 second ON/OFF down time in the power cycle (UST1 or UMT8).

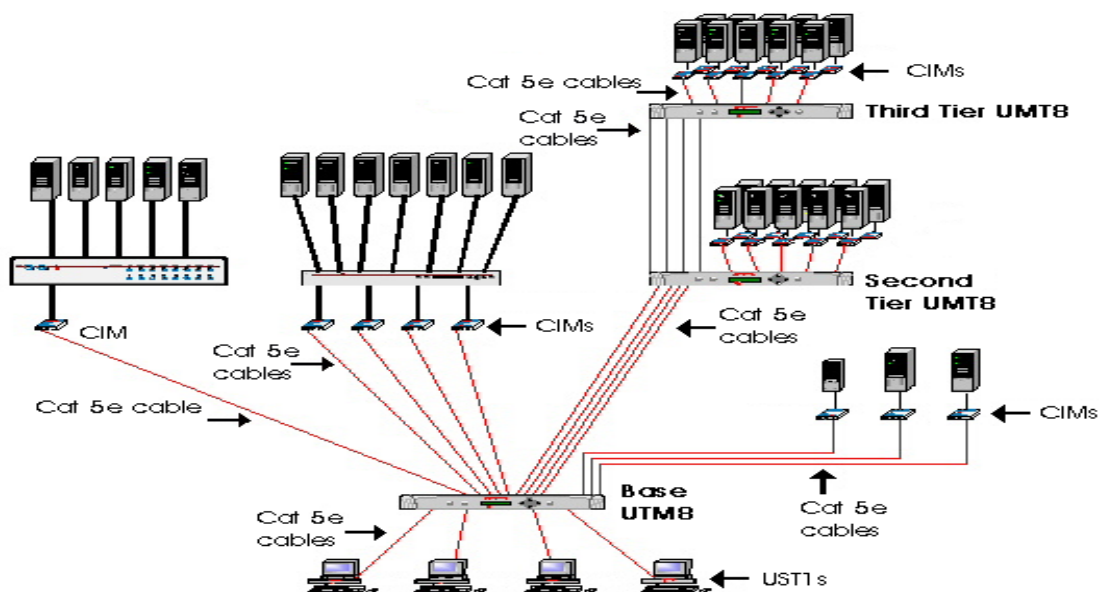


Figure 15. Multi-Tier Configuration

1. Install Base Unit-First Tier-UMT8

Follow **Basic Installation** (page 6) to set up base UMT8, but reserve sequential channels on the base UMT8 for cascading second-tier KVM switches according to the following guidelines:

- For each tiered UMT8, reserve up to 8 channels
- For each tiered Z-Series Z4200U, MasterConsole II or MasterConsole P, reserve one channel.
- For each tiered MasterConsole MX⁴, reserve up to 4 channels.
- For each tiered MasterConsole MXU2, reserve up to 2 channels.

NOTE: For any two-tier or three-tier configuration—The last tier switches must be powered ON before the intermediate level of tier switches and then the base UMT8 is powered ON.

2. Connect Tiered Raritan KVM Switches to Base UMT8 Unit:

A. Connecting UMT8 as Second or Third Tier

1. Connect one end of Category 5e UTP cable to user port of second-tier UMT8.
2. Connect other end of cable to one of the 8 channels reserved on base UMT8.
3. Repeat steps 1 and 2 to connect remaining user ports on second-tier UMT8 to channel ports reserved on base UMT8.

A base unit UMT8 will automatically recognize a second-tier connected UMT8 and update the configuration automatically. Follow the same procedure to add a third tier. The base unit, and first level tier will automatically be recognized by the base unit UMT8.

Note: Installing the VT100 adapter into the top expansion Expansion Port on the back panel of the UMT8, will improve video quality. A VT100 should be installed on each UMT8 in your configuration.

Note: Paragon's Matrix Switching Unit Expansion Ports exemplify Raritan's dedication to future development. While these Expansion Ports are currently non-functional, they reserve a location for the future implementation of Raritan Banking Technology, a potentially improved KVM configuration design that conceivably banks or links Matrix Switching Units directly to each other.

4. Channel configuration
 - At a User Station **Login Menu** type "*admin*" in the user name field. Press <Enter>. In the password field type "*raritan*" (all in lower case). Press <Enter>.

Note: If necessary, press **Hot Key** (default <ScrollLock>) twice rapidly to bring up OSUI. Then press <F9> to go to **Login Menu**.

- Press <F5> to activate **Administration Menu**.
- Use <↑> and <↓> keys to select **Channel Configuration**. Press <Enter>.
- Use <↑> and <↓>, or <PageUp>, and <PageDown> keys to go to channels where UMT8 paths are connected.
- Use <↑> and <↓>, or <PageUp>, and <PageDown> keys to go to the UMT8 tier path to be named.
- Press <Enter>. The yellow highlight will turn blue.
- Type the desired name for this tier path.
- Press <Enter>. The highlight will turn yellow.
- Press <S> to save the name. All tier paths will be automatically named.
- Press <Esc> to return to the **Administration Menu**.

5. Press **<F2>** to go to **Selection Menu** to validate that the second-tier UMT8 is properly established. All UMT8 paths should be displayed in purple.
6. Press **<F5>** to go to **Administration Menu**. Select **Channel Configuration** submenu. Select a channel that has been configured for UMT8. Press **<G>** to bring up a **Channel Configuration** menu for the UMT8. Edit the computer names.
7. Press **<S>** to save the new configuration.
8. Press **<F2>** to go to **Selection Menu** to validate that second-tier UMT8 is properly configured. Select one UMT8 channel, press **<Enter>** to go to UMT8 selection menu. Select one UMT8 channel and press **<Enter>**. Verify proper access to selected computer.

B. Connecting Z-Series Z4200U Z-CIMs as a Tier

Tiering a Z4200U chain requires UST1/UMT8 firmware versions 2K10/2B1 or higher.

Note: All Paragon UMT8 switches shipped from Raritan after January 1, 2002 can support connection to a chain of Z4200U Z-CIMs.

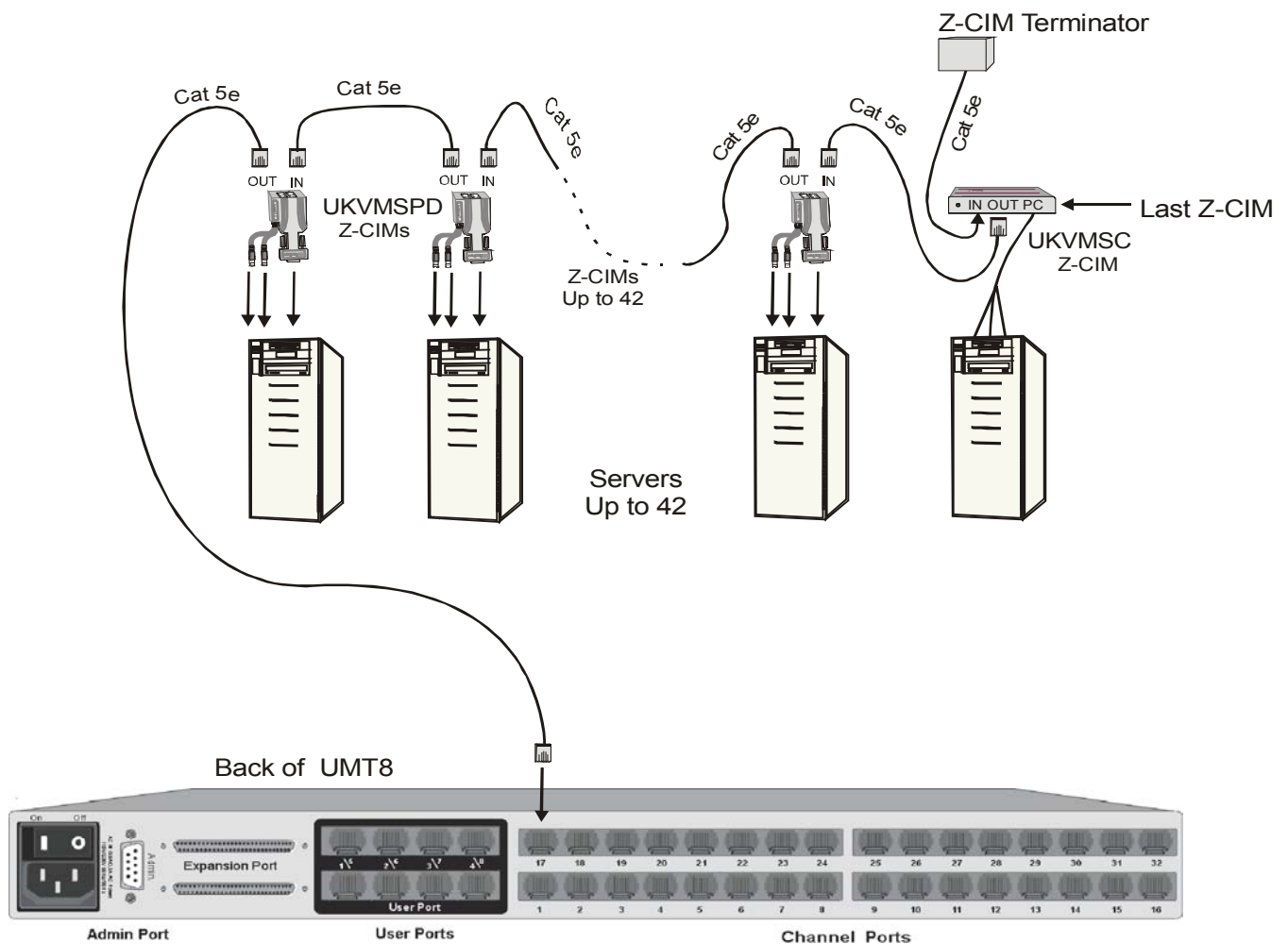


Figure 16. Connecting a Z-Series Z4200U as a Tier to Paragon

Note: All Paragon components must be powered ON prior to Z-Series tier installation.

Note: All computers in the Z-chain and all Z4200U components must be powered OFF prior to installation.

Note: Z-Series installation requires that each computer be assigned a channel name as it is added to the Z4200U chain. Computer channels are organized alphabetically by assigned name (or the default name, which is the Z-CIM's serial number), rather than in the order of their placement within the Z4200U chain. Installers that first connect all computers and then attempt to assign channel names will have difficulty locating the respective channel for each computer.



Figure 17. Z-CIM UKVMSPD



Figure 18. Z-CIM UKVMSC with local port

Note: -For installation and configuration instructions that follow, the **Selection Menu <F2>** should always be sorted **<F12>** by channel ID number, rather than by name.

1. Connect a Category 5e UTP cable to the channel port on the UMT8 reserved for the Z4200U chain.
2. Connect the other end of this Category 5e UTP cable to the UTP OUT port on a Z-CIM, which will be the first Z-CIM in the Z4200U chain.
3. Connect a computer to the first Z-CIM:
 - For UKVMSPD Z-CIM (Figure 17) :
 - Connect the 6-pin mini-DIN keyboard and mouse, and HD15 video connectors on the UKVMSPD Z-CIM to computer's keyboard, mouse, and video ports.
 - Place the Z-CIM Terminator in the Z-CIM's UTP IN port.
 - Power ON computer.
 - For UKVMSC Z-CIM (Figure 18) with local port:
 - Connect DB25 male end of CCPnn cable to DB25 female port on back of a Z-CIM (UKVMSC). Connect other end to computer's keyboard, video, and mouse ports.
 - Place the Z-CIM Terminator in the Z-CIM's UTP IN port.
 - Power ON computer.
 - Optional: See page Figure 19 to install a local user console to the UKVMSC Z-CIM.
4. Perform Channel Configuration:
 - At a User Station **Login Menu** type "*admin*" in the user name field. Press **<Enter>**. In the password field type "*raritan*" (all in lower case). Press **<Enter>**.
 - Press **<F5>** to go the **Administration Menu**. Select **Channel Configuration** submenu.

- Use <PageUp>, <PageDown>, <↑> and <↓> keys to select the Paragon channel where the Z-CIM was just added.
 - Ensure that the **Device** field say “ZSeries.” If the **Device** field does not say “Z-Series” then:
 - <Tab> to **Device** field. Hit <Enter>. Highlight turns green.
 - Use <↑> and <↓> keys to change device type to Z-Series.
 - Press <Enter>. Highlight will return to yellow.
 - Press <S> to save the change, or Press <Esc> to exit without saving.
 - If a more descriptive name is desired:
 - Press <Shift/Tab> to go back to **Name** column.
 - Press <Enter> and highlight turns blue.
 - Edit default name —highlight turns green as typing starts.
 - Press <Enter>.
 - Press <S> to save the change, or Press <Esc> to exit without saving.
 - Press <F2> to go **Selection Menu** to validate that second-tier Z4200U is properly configured. Select the tiered Z4200U device and switch to it by pressing <Enter>.
5. Name Computer Channel on Z4200U tiered Selection Menu & Test Operation
 - While viewing the Paragon **Selection Menu** or any OSUI menu, press <F5> to go to **Administration Menu**.
 - Select **Channel Configuration** submenu.
 - Select the Z4200U device channel.
 - Press <G> to bring up a Channel Configuration menu of the Z4200U chain.
 - Use <↑> and <↓> keys to highlight in yellow the **Name** field of the computer just connected via Z-CIM. The channel for this computer will be displayed in green.
 - Press <Enter>. Highlight turns blue
 - Type in a desired computer name —highlight turns green as typing starts—and press <Enter> when completed. Highlight area will turn yellow.
 - Press <S> to save the new name.
 - Press <F2> to return to the Selection Menu.
 - The **Selection Menu** will display with the new computer name highlighted in white.
 - Press <Enter> to switch to this selected computer.
 6. Normal computer access and operation indicates a successful connection.
 7. Build the rest of the Z4200U chain of servers, repeating steps a, b, and c below for each server to be added to the chain. Name and test each computer as it is added.
 - a) Attach Z-CIM to computer to be added:
 - For UKVMSPD Z-CIM (Figure 17):
 - Connect the 6-pin mini-DIN keyboard and mouse, and HD15 video connectors on the UKVMSP Z-CIM to computer’s keyboard, mouse, and video ports.
 - For UKVMSC Z-CIM (Figure 18) – with local port:
 - Connect CCPnn cable’s 6-pin mini-DIN and HD15 connectors to computer’s keyboard, mouse, and video ports.
 - Connect DB25 male end of CCPnn cable to DB25 female port on back of Z-CIM (UKVMSC).
 - b) Attach Z-CIM to Z4200U chain:
 - Remove Z-CIM Terminator from the last Z-CIM’s UTP IN port and set aside.
 - Connect a Category 5e UTP cable to UTP IN port on the Z-CIM that is currently last in the chain.
 - Connect the other end of this Category 5e UTP cable to the UTP OUT port on the next Z-CIM/computer currently being added to the chain.
 - Place the Z-CIM Terminator in the added Z-CIM’s UTP IN port.
 - Power ON computer.
 - Optional: For a UKVMSC see Figure 19 to install a local user console.

c) Name Computer and Test Operation:

- At the Selection Menu, press <F5> to go to **Administration Menu**.
- Select **Channel Configuration** submenu.
- Select the Z4200U device channel.
- Press <G> to bring up a Channel Configuration menu of the Z4200U chain.
- Use <↑> and <↓> keys to highlight in yellow the **Name** field of the computer just connected via Z-CIM. The channel for this computer will be displayed in green.
- Press <Enter>. Highlight turns blue
- Type in a desired computer name—highlight turns green as typing starts—and press <Enter> when completed. Highlight area will turn yellow.
- Press <S> to save the new name.
- Press <F2> to return to the Selection Menu.
- The **Selection Menu** will display with the new computer name highlighted in white.
- Press <Enter> to switch to this selected computer.
- Normal computer access and operation indicates a successful connection.

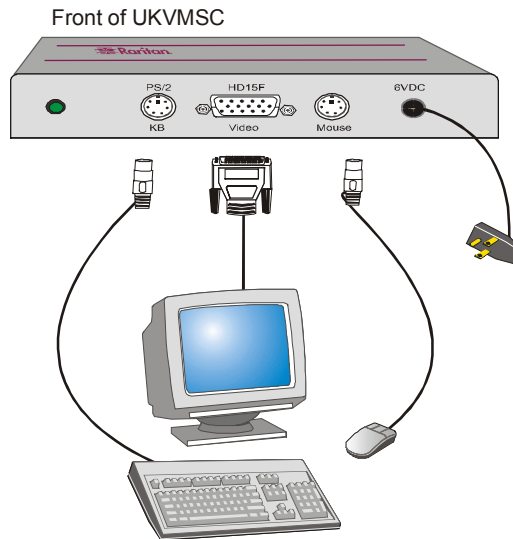


Figure 19. Connecting a Local User Console to USKVMC Z-CIM

C. Connecting a MasterConsole MX⁴ as a Tier

1. While holding the MX⁴'s front panel <FUNC> button down, power on the MX⁴. The MX⁴ unit will reset to factory defaults.
2. Set MX⁴ user port as a second-tier port.
 - From the MX⁴ front panel, press <Func> to invoke "Function Menu".
 - Use <↑> and <↓> keys to go to "Set Tier" function, press <Ent>
 - Use <↑> and <↓> keys to select the proper user port number.
 - Press <←> to set user port as a second-tier port (**T**), press <Ent>
 - Repeat above steps for all user ports to be connected to the base UMT8.

3. Connect an MX⁴ tiered user port to base UMT8.
 - If using CIM UKVMC—Use a cascade cable (CCPnnE) and connect DB25 connector (female) into one of the user ports designated to be the tier. Connect the cable's other DB25 (male) into the DB25 connector on the UKVMC.
 - If using CIM UKVMP—Connect the UKVMP keyboard, monitor, and mouse cables into the MX⁴ CCPnnF user cable
 - Connect a Category 5e UTP cable between the CIM and one of the 4 channels reserved for MX⁴ on base UMT8.
 - Repeat above steps to connect remaining tier MX⁴ user ports to channels reserved on base UMT8.
4. Channel configuration
 - At a User Station **Login Menu** type “*admin*” in the user name field. Press <Enter>. In the password field type “*ruritan*” (all in lower case). Press <Enter>.

Note: If necessary, press **Hot Key** (default <ScrollLock>) twice rapidly to bring up OSUI. Then press <F9> to go to **Login Menu**.

- Press <F5> to activate **Administration Menu**.
 - Use <↑> and <↓> keys to select **Channel Configuration**. Press <Enter>.
 - Use <↑> and <↓>, or <PageUp>, and <PageDown> keys to go to channels where MX⁴ paths are connected.
 - Use <Tab> to go to **Device** Column.
 - Press <Enter>, the highlight will turn green.
 - Use <↑> and <↓> keys to set to MX⁴ (MX4-8, MX4-16, or MX4-32).
 - Press <Enter> to save the change.
 - Press <Shift/Tab> to go back to **Name** column. Press <Enter> Edit default name to a more meaningful name.
 - Press <Enter> to retain change.
 - Repeat these channel configuration steps for each path. **You must name all MX⁴ paths with the same name. This will notify Paragon that these paths are connected to the same MX⁴.**
 - Press <S> to save the new configuration.
9. Press <F2> to go **Selection Menu** to validate that the second-tier MX⁴ is properly established. All MX⁴ paths should be displayed in purple.
 10. Press <F5> to go to **Administration Menu**. Select **Channel Configuration** submenu. Select a channel that has been configured for MX⁴. Press <G> to bring up a **Channel Configuration** menu for the MX⁴. Edit the computer names.
 11. Press <S> to save the new configuration.
 12. Press <F2> to go to **Selection Menu** to validate that second-tier MX⁴ is properly configured. Select one MX⁴ channel, press <Enter> to go to MX⁴ selection menu. Select one MX⁴ channel and press <Enter>. Verify proper access to selected computer.

D. Connecting a MasterConsole MXU2 as a Tier

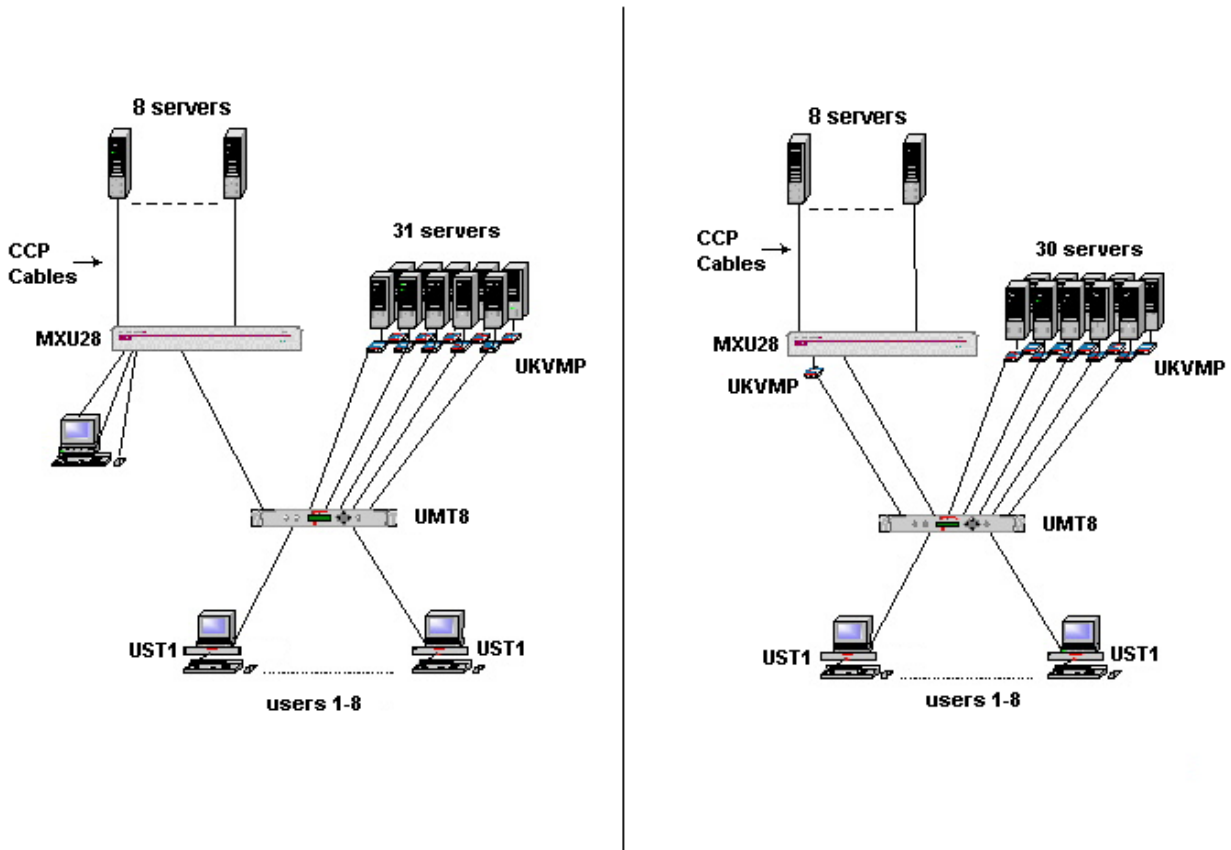


Figure 20. Connecting a MasterConsole MXU2 as a Paragon Second Tier

1. Configure the MasterConsole MXU2 unit as a second tier device.
 - a) Attach a user console to the MXU2 unit that will be used as a second tier unit.
 - Connect user console to appropriate ports on back of MXU2 – keyboard to port labeled “Keyboard” (6-pin mini-DIN Female), mouse to port labeled “Mouse” (6-pin mini-DIN Female), and monitor to port labeled “Monitor” (HD15 Female).
 - Plug in monitor power cord and turn on monitor.
 - b) Power on the MXU2 and login.
 - Connect power cord to back of MXU2 unit and AC power outlet.
 - Power ON the MXU2 via the power switch on the back of the unit.
 - The Login Menu will be displayed on the monitor.
 - Enter “*admin*” in the user name field of the Login Menu, and press **<Enter>**. Enter “*ruritan*” in the password field, and press **<Enter>**. The Selection Menu will be displayed (Figure 4).
 - c) Set up the MXU2 as a second tier unit.
 - At the Selection Menu press **<F5>**. The Administration Menu will appear.
 - Highlight selection number 1 – System Configuration – and press **<Enter>**. The System Configuration Menu will appear.
 - On the System Configuration menu, set each second tier user port to **Yes**.

- Press the <Tab> (forward) and <Shift-Tab> (backward) keys to move to the **User 1-2 Tier:** field. The first entry in this field applies to user port 1, and the second entry applies to user port 2.
- Press <Enter> to edit each user tier field. The highlighted area will turn green.
- Use the <↑>, <↓>, <←>, or <→> keys to select **Yes** for each user port that will be connected as a second tier.
- When the editing is completed, press <Enter> and the field will turn yellow.
- Press <S> to save the changes.

Note: Unblocked access to second tier computers, where two users can access second tier computers simultaneously, is recommended. For unblocked access, two vertically consecutive channels should be reserved - 1-2 or 3-4 or 5-6 or 7-8 etc... - for each second tier MXU2 unit to be connected.

- d) The MXU2 is now programmed for second tier use.
 - e) Power off the MXU2 via the power switch in the back of the unit.
 - f) Disconnect the user console from this MXU2 second tier unit.
2. Connect MasterConsole MXU2 to UMT8.
 - Connect a Category 5e UTP cable to each of the channels reserved for the MXU2 on the base UMT8.
 - Connect the other end of this Category 5e UTP cable to the second tier MXU2 user port(s).
 - For MXU2 User 1 (Local User Console Port):
 - Connect the other end of the Category 5e UTP cable to UKVMP's RJ45 port.
 - Connect the UKVMP's 6-pin mini-DIN and HD-15 connectors to the appropriate keyboard, monitor and mouse ports of the MXU2 User 1 port.
 - For MXU2 User 2 (Remote Category 5e UTP Port): Connect the other end of the Category 5e UTP cable to the RJ45 User 2 port on the back of the MXU2.
 3. Perform channel configuration.
 - At a User Station **Login Menu** type "*admin*" in the user name field. Press <Enter>. In the password field type "*ravitan*" (all in lower case). Press <Enter>.
 - Press <F5> to go the **Administration Menu**. Select **Channel Configuration** submenu.
 - Use <PageUp>, <PageDown>, <↑> and <↓> keys to select channel where MasterConsole MXU2 is connected.
 - <Tab> to **Device** field. Hit <Enter>. Highlight turns green.
 - Use <↑> and <↓> keys to change device type to a MasterConsole MXU2 (MXU28 or MXU216).
 - Press <Shift/Tab> to go back to **Name** column. Press <Enter> Edit default name.
 - Press <S> to save the new configuration.
 4. Press <F2> to go **Selection Menu** to validate that second-tier MasterConsole MXU2 is properly configured. Select and switch to one of the MasterConsole MXU2 channels to ensure proper switching.
 5. Press <F5> to go to **Administration Menu**. Select **Channel Configuration** submenu. Select the MasterConsole MXU2 channel. Press <G> to bring up a **Channel Configuration** menu of the MasterConsole MXU2. Edit names.
 6. Press <S> to save the new configuration.

E. Connecting a MasterConsole II (Model MCC only) as a Tier

1. Set MasterConsole II as a tier device.
 - While turning on power, press and hold Channel #2 button on front panel for 3 seconds. This sets the MasterConsole II as a second-tier device.
 - Observe that LED on far right of unit's front panel (2ND for MasterConsole C models) will be lit steadily.
2. Connect MasterConsole II to UMT8.
 - If using a CIM UKVMC—use a CCPnn cable to connect keyboard, monitor, and mouse connectors to user ports on MasterConsole II. Connect DB25 connector to UKVM.
 - If using a CIM UKVMP—Connect keyboard, monitor, and mouse cables to MasterConsole II user port.
 - If utilizing user port of a MasterConsole X model for second-tier connection, first connect a RKVM module to the MasterConsole X model with a CVnn cable. Then connect a CIM cable to keyboard, monitor, and mouse ports of RKVM module.
 - Connect a Category 5e UTP cable to CIM.
 - Connect other end of Category 5e UTP cable to channel port reserved on base UMT8.
3. Perform channel configuration.
 - At a User Station **Login Menu** type "*admin*" in the user name field. Press <Enter>. In the password field type "*raritan*" (all in lower case). Press <Enter>.
 - Press <F5> to go the **Administration Menu**. Select **Channel Configuration** submenu.
 - Use <PageUp>, <PageDown>, <↑> and <↓> keys to select channel where MasterConsole II is connected.
 - <Tab> to **Device** field. Change device type to a MasterConsole II (MasterConsole II-4, 8, 16).
 - Press <Shift/Tab> to go back to **Name** column. Press <Enter> Edit default name.
 - Press <S> to save the new configuration.
4. Press <F2> to go **Selection Menu** to validate that second-tier MasterConsole II is properly configured. Select and switch to one of the MasterConsole II channels to ensure proper switching.
5. Press <F5> to go to **Administration Menu**. Select **Channel Configuration** submenu. Select the MasterConsole II channel. Press <G> to bring up a **Channel Configuration** menu of the MasterConsole II. Edit names.
6. Press <S> to save the new configuration.

F. Connecting a MasterConsole P as a Tier is Not Recommended. This connection should be verified as to the level of user satisfaction prior to continuing.

Note: As a tier device to Paragon, MasterConsole P model can be single bank only.

1. Connect MasterConsole P to base UMT8.
 - If using a CIM UKVMC—Use a CCPnn cable to connect keyboard, monitor, and mouse connectors of cable into keyboard, monitor, and mouse ports of MasterConsole P unit. Connect DB25 connector into UKVM.

- If using a CIM UKVMP—Connect keyboard, monitor, and mouse cables to MasterConsole P user port.
 - Connect Category 5e UTP cable to RJ45 port on UKVM.
 - Connect other end of Category 5e UTP cable to channel port reserved on base UMT8.
2. Perform channel configuration.
 - At a User Station **Login Menu** type “*admin*” in the user name field. Press <Enter>. In the password field type “*raritan*” (all in lower case). Press <Enter>.
 - Press <F5> to go to **Administration Menu**. Select **Channel Configuration** submenu.
 - Use <PageUp>, <PageDown>, <↑> and <↓> keys to select channel where MasterConsole P is connected.
 - <Tab> to **Device** field. Change device type to the specific MasterConsole P model.
 - Press <Shift/Tab> to go back to **Name** column. Press <Enter> Edit name field.
 - Press <S> to save new configuration.
 3. Press <F2> to go to **Selection Menu** to validate that second-tier MasterConsole P is properly configured. Select and switch to one of the MasterConsole P channels to ensure proper switching.
 4. Press <F5> to go to **Administration Menu**. Select **Channel Configuration** submenu. Select the MasterConsole P channel. Press <G> to bring up a **Channel Configuration** menu for MasterConsole P. Edit name fields.
 5. Press <S> to save the new configuration.

Note: All tier MasterConsole P models must be **MasterView ready**. To determine whether your MasterConsole P model is MasterView ready, check the white label on the bottom of the unit. Locate unit's firmware version: MDSP-nnn. If firmware version is MCSP-1AC or higher (e.g., MDSP-1AD), the unit is MasterView ready.

Note: Some MasterConsole P models that are not MasterView ready can be upgraded to MasterView Ready. Call Raritan Technical Support for details and pricing.

4. OPERATING PARAGON

Paragon's On-Screen User Interface (OSUI) menu is used to access the Paragon system.

Login

Login is required to access computers and devices connected to Paragon.

To display **Login Menu** (Figure 21) on a user station monitor hit the **Hot Key** (default <ScrollLock>) key twice rapidly to bring up Paragon's OSUI, then press function key <F9> to bring up **Login Menu** within Paragon's OSUI.

Note: **Login Menu** automatically displays on all user stations after initial Paragon power on. In this instance users do not have to bring up OSUI or **Login Menu**.

Device ID is the name of UMT8. User Port is the number (1 through 8) of UMT8 user port to which this user station is connected.

Note: If user station monitor displays message "...No Connection to Paragon...", then user station (UST1) is not connected properly to a UMT8 unit, or UMT8 unit is not functioning properly, or UMT8 is powered off. Check UMT8 LCD for proper operational display. Check Category 5e UTP cable to ensure it is secured properly into connectors. Try to recycle AC power on user station (UST1) to ensure it is properly powered.

Figure 21. Login Menu

1. Enter **user name** which was assigned by system administrator. If user names have not been assigned, the default is "user01" through "user07" for users, and "admin" for the administrator. **User names are not case sensitive.** Press <Enter>.
2. If a password is necessary, prompting for one will occur. Type password and press <Enter>. The default "admin" password is - "raritan" - typed in lower case. **Passwords are case sensitive.** (See **Changing Password** under section entitled *User Customization* on page 24).
3. **Selection Menu** will display (Figure 22 or Figure 23.) To go to other menus, use function keys. (See section entitled *On-Screen User Interface Functions* on page 26).

A user can **log-out** of the Paragon system by pressing function key <F9> when the OSUI is displayed.

Selecting a Computer

Immediately following user log in, Paragon's OSUI displays the **Selection Menu**.

Users who are already logged in will need to bring up the **Selection Menu** by activating Paragon's OSUI by pressing the **Hot Key** (default <ScrollLock>) key twice rapidly, and pressing the function key <F2> to bring up **Selection Menu**.

Selection Menu (Figure 22 or Figure 23) lists devices sorted either by channel ID (**Ch. ID**) number, or alphabetically by device or computer name (F12 toggle). Default sorting is by channel ID number, however unless the system is re-initialized the last selected sorting method will be shown when **Selection Menu** is activated.

Selection Menu			
UMT8 HWII No	Ch. ID	Name	Page 1/4 Scn
1	01		03
2	02	NT4.0 Mail	03
3	03	Wins95.Bob	03
4	04 ▶	Wins98.Jack	03
5	05	MX4-Wing.2	--
6	06	NT4.0-Fax	03
7	07	MC2-16.Reg1	--
8	08	UMT8-Wing.4	--
..... Scrolling Messages Banner.....			
ScrlLock Scan Skip NCSL			

Figure 22. Selection Menu by Channel ID Number

Selection Menu by Name		
	Name	Page 1/4 Ch. ID
	MC2-16.Reg1	07
	MX4-Wing.2	05
	NT4.0-Mail	02
	NT4.0-Fax	06
	UMT8-Wing.4	08
	Win95.Bob	03
▶	Wins98.Jack	04
		01
..... Scrolling Messages Banner.....		
ScrlLock Scan Skip NCSL		

Figure 23. Selection Menu by Name

1. Press <F12> to toggle between sorting by channel ID (**Ch. ID**) number (Figure 22) or by device name (Figure 23).
 - **Selection Menu** displays up to eight channels per page.
 - **Ch. ID** indicates physical channel to which each device or computer is connected.
 - **Name** lists connected device or computer name.
 - **Scan** shows each channel's specific scan rate, in seconds

Note: <F10> toggle key **will only operate** if **Selection Menu** is sorted by **Channel ID** or if system is configured with a setting of **Yes** for Display All Computers.

If system administrator has set **System Configuration Menu** (Figure 30) option for “**Display All Computers**” to **Yes**, pressing <F10> toggles between showing and not showing all channels on user OSUI menu.

When <F10> is toggled to show all channels, the channel's scan rate is followed by a red “S”, indicating a group security conflict, making that computer non-accessible to that user.

2. Use highlight bar to select a channel for a device or computer.

Note: A small red triangle on left side of channel name indicates to which channel user is currently connected – if currently connected.

- Press <PageUp>, and <PageDown>, or <↑>, and <↓> keys to highlight desired channel and press <Enter>.

When Selection Menu is sorted by Channel ID number (Figure 22):

User can press desired computer's key number (1-8) as shown on that OSUI **Selection Menu** page – shown in the left-hand column under **No** – to quickly jump to that channel, and press <Enter>.

When Selection Menu is sorted by Name (arranged alphabetically)(Figure 23):

User can type the first character(s) of desired device name to quickly jump to device name that most closely matches the characters typed, and press <Enter>.

When user selects a channel by pressing <Enter>

- **If channel represents a computer:** user automatically goes to normal computer operation and leaves OSUI.
- **If channel represents a connected MasterConsole device (Two-Tier Configuration):**
User displays additional OSUI **Selection Menu** for that device. To return to the base Paragon **Selection Menu** from any other level of **Selection Menu**, press <Home> key.

3. Channel switching can be repeated by pressing the **Hot Key** (default <ScrollLock>) key twice rapidly to bring up OSUI **Selection Menu**, or by pressing the **Previous Channel** (default <NumLock>) key twice rapidly to go back to previously selected channel without seeing OSUI.

Note: Each channel's availability is visually indicated on **Selection Menu** by the following text colors:

- **Black**— no computer connected or computer is powered down.
 - **Green**— channel is active and available. However, if system is configured in **PC Share Mode**, computer may be currently accessed by another user. (See bottom of page 28 – **Operation Mode**)
 - **Red**— unavailable, currently being accessed by another user. (System is configured in **Private Mode**). (See bottom of page 28 – **Operation Mode**)
 - **Yellow**— unavailable, another user is connected, but video is available to view. (System is configured in **Public View Mode** – see below for more information on **Additional OSUI Displays That Appear When in Public View Mode**.) (See bottom of page 28 – **Operation Mode**)
 - **Purple**— connected to a second-tier UMT8, Z-Series Z4200U, MasterConsole MX4, MasterConsole MXU2, or MasterConsole II (model MCC only).
 - **White**— current status unknown.
-

Additional OSUI Displays That Appear When in Public View Mode:

Selecting another computer's video, in order to share a view of this computer's video, in **Public View Mode** will display the message shown below (Figure 24). **Public View Mode** enables only viewing of another computer's video (keyboard and mouse will not enable changes to be made to video being viewed). **This message cannot be removed.** Pressing <Esc> key returns user to **Channel Selection Menu**.

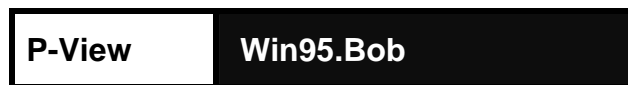


Figure 24. PublicView Only Message

If another user chooses to view your computer's video in **Public View Mode**, a message displays on your monitor (Figure 25). The name of the viewing user is shown. When this user stops viewing your video (by selecting another channel to view, or by logging out of the system <F9>), another message is displayed (Figure 26). Each message will disappear in 3 seconds.



Figure 25. PublicView Sign On



Figure 26. PublicView Sign Off

User Customization

The **User Profile Menu** (Figure 27) (function key <F4> while in the OSUI) is for displaying Paragon configuration and for setting/changing preferred operating parameters.

User	Profile	
Connected:	UMT8 HWII	
User: Susan	User Port: 1	
Admin: No		
Group: 45		
Scan Mode:	Global	
Global Scan Rate:	03 Seconds	
ID Display:	On 03 Seconds	
Green Mode:	Off 05 Minutes	
Hotkey:	Scroll Lock	
Display Position:	Menu ID	
Previous Channel Key:	NumLck	
Help: Single Line	LocalPC: Off	
..... Scrolling Messages Banner.....		
ScrlLock	Scan	Skip NCSL

Figure 27. User Profile Menu

1. Activate OSUI by pressing the **Hot Key <ScrollLock>** key twice rapidly.
2. Press <F4> to access User Profile screen.
 - **Connected** field displays name and Channel ID number of selected device or computer, if user is currently connected to a channel.
 - **User** field displays user name entered at login.
 - **User Port** field displays UMT8 user port to which user is connected.
 - **Admin** field displays user's administrator privileges – if any.
 - **Group** field displays user's group ID(s).
3. Select field to be edited by pressing <Tab> (forward) <Shift-Tab> (backward), <↑>, <↓>, <←>, or <→> keys to move to desired field. Press <Enter> to begin editing. Highlighted area will turn green. Follow **Instructions below For Interpreting and Editing Each Specific User Profile Menu Option**.

When editing is completed either press <Enter> (highlighted selection will turn yellow) to retain changes, and then press <S> to save changes; or press <Esc> to cancel changes.

Note: If <S> had not been pressed to save changes, choosing <Esc>, or pressing any function key that causes user to exit **User Profile Menu**, prompts user with an opportunity to save any changes (Y/N) before exiting.

Instructions For Interpreting and Editing Each Specific User Profile Menu Option:

- **Scan Mode:** Use <↑> and <↓>, or <←> and <→> keys to toggle between **Global** and **Individual**. **Global Scan Mode** scans each channel for the same amount of time, indicated by the **Global Scan Rate**. **Individual Scan Mode** scans each channel for the specified time as shown in **Selection Menu**. Default setting is Global. (Setting the channel's individual scan rate is an administrator function).

- **Global Scan Rate:** Type a number from 01 to 24, or use <↑> and <↓> keys to increment or decrement. Default setting is 03 seconds.
- **ID Display:** The **ID Display** is a small window that shows computer name and Channel ID number when switching or scanning between channels. Two fields control it:
 - **On/Off:** Use <↑> and <↓>, or <←> and <→> keys to toggle between on and off.
 - **Time:** Type a number from 01 to 24, or use <↑> and <↓> keys to increment or decrement. When a time beyond 24 is chosen, a “—” displays, indicating the ID window will be shown all the time. Default setting is On/03 seconds.
- **Green Mode (PowerSave Mode):** Blanks screen if user console is idle for a pre-specified amount of time. Two fields control it:
 - **On/Off:** Use <↑> and <↓>, or <←> and <→> keys to toggle between on and off.
 - **Time:** Type a number from 01 to 99, or use <↑> and <↓> keys to increment or decrement. Default setting is Off/05 minutes.
- **Hot Key:** Use <↑>, <↓>, <←>, or <→> keys to select <ScrollLock>, <CapsLock>, or <NumLock>. Default setting is <ScrollLock>. Pressing selected **Hot Key** twice rapidly activates Paragon’s On-Screen User Interface (OSUI).

Note: **Hot Key** and **Previous Channel Key** (see below) may not share the same designation.

- **Display Position:** For positioning On-Screen Menu and ID Display Window. Use <↑>, <↓>, <←>, and <→> keys to physically position selected window.
- **Previous Channel Key:** Use <↑>, <↓>, <←> or <→> keys to select <ScrollLock>, <CapsLock>, <NumLock>, or <None>. Default setting is <NumLock>. Pressing the selected **Previous Channel key** twice rapidly enables user to go back to previously selected device without going through the OSUI, provided that device is still accessible to user.

Note: **Previous Channel Key** and **Hot Key** (see above) may not share the same designation.

- **Help:** For setting the help message at the bottom of each On-Screen User Interface (OSUI) menu. Use <↑>, <↓>, <←>, and <→> keys to select **Single Line** (scrolling message banner) or **Circ Left** (static message banner). Default is **Single Line**.
- **LocalPC:** Used to set UST1 in **Person Computer Access Mode**. Default setting is off. See **Appendix D: Personal Computer Access Via Z-CIM**.

4. **Changing Password within User Profile Menu:** To add, delete, or change a password, press <P>, while viewing the **User Profile Menu**. Type old password at prompt. At next prompt, type a new password of up to eight characters. Press <Enter>, and confirm by re-entering new password. Then either press <Enter> again to retain change, or press <Esc> to cancel it.

On-Screen User Interface (OSUI) Functions

Use the following function keys to access Paragon OSUI functions:

<u>Press...</u>	<u>When you want to...</u>
<F1>	View the Help Menu
<F2>	View the Selection Menu —list of channels, group IDs, scan rates; or select a channel
<F4>	View the User Profile Menu —view and change user-specific operating parameters
<F5>	View the Administration Menu —only for users with administrator privileges
<F6>	Toggle On/Off AutoScan —only for users with administrator privileges
<F7>	Toggle On/Off AutoSkip —only for users with administrator privileges
<F8>	View Information Menu —displays firmware and hardware version numbers, number of accessible KVM switches and total number of accessible channels (PCs)
<F9>	Logout of Paragon—logs user out and displays the login screen
<Shift-F9>	With any OSUI displayed— Disconnects user from active channel without logging out
<F10>	Toggle menu to Display all Channels On/Off. Operational if Selection Menu is sorted by Channel ID and if Display All Computers is set to Yes
<F12>	Toggle selection menu to sort by name or sort by channel ID
<Esc>	Exit the OSUI—returns user to selection menu or login screen when no channel is selected

Note: If a user does not have administrator privileges, then functions <F5>, <F6>, and <F7> are displayed in red, indicating this function is not available to user.

If system administrator has configured the system by setting **Display All Computers** to **No**, then <F10> will be displayed in red, indicating this function is not available to user.

Help			
F1	Help / ESC	Exit	
F2	Channel Selection		
	- F12	Sort by Channel / Name	
F4	User Profile		
F5	Administrative Functions		
F6	Toggle Scan On/Off		
F7	Toggle Skip On/Off		
F8	Information Screen		
F9	Logout		
	- Shift+F9	Release Channel	
F10	Toggle Disp All Ch.	On/Off	
..... Scrolling Messages Banner.....			
ScrLk		Scan	Skip NCSL

Figure 28. Help Menu

5. ADMINISTRATIVE FUNCTIONS

Administrative functions are performed from a set of administration menus, and enable system administrators to control how users access devices and computers connected to the Paragon system.

Administration Menu

The **Administration Menu**¹ is used for setting security classes, maintaining user names and privileges, and managing the system configuration, which enables the administrator to control user access to Paragon and all connected devices.

- 1. Login to the system as “admin” or your user name if you have administrator privileges. The **Selection Menu** will be displayed.

Note: The default password for the login “admin” is “raritan” (all in lower case).

- 2. Press <F5>. **Administration Menu** displays a list of submenu options (Figure 29).

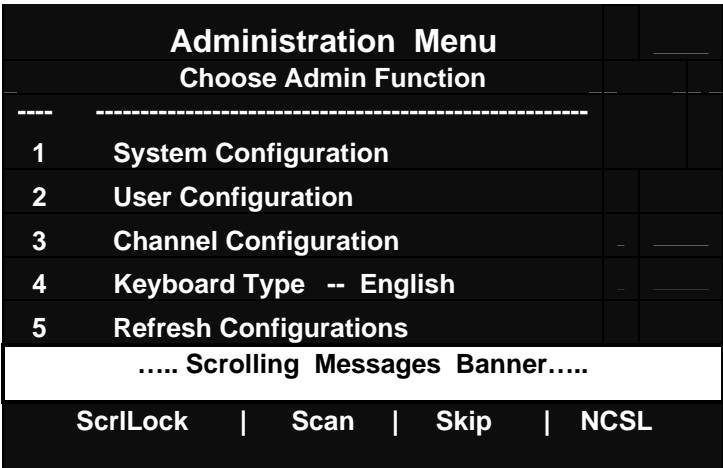


Figure 29. Administration Menu

- 3. Use the <↑> and <↓> keys, or 1 – 5, to select desired submenu, and press <Enter>.

System Configuration

System Configuration Menu (Figure 30) is used for setting global parameters.

- 1. **System Configuration Menu** displays current settings of global parameters.
- 2. Press <Tab> (forward) or <Shift-Tab> (backward) keys to move to a desired field. Press <Enter> to edit the field. Highlighted area will turn green. When editing is complete, either press <Enter> to save changes or press <Esc> to cancel them.

¹ Administrative user IDs that have group ID of 00 have complete access to all submenus. Other administrative users have limited access that can not select the top 2 submenus.

System Configuration			

Device ID:	UMT8	HWII	
Display All Computers:	No		
Logoff Timeout:	Off	05	Minutes
Operation Mode:	Private		
P-View Admin Silent:	No		
PC Share Timeout:	01	Sec	
Login Blank:	Off	05	Minutes
Allow Blank Password:	No		
Default Login Name Blank:	Yes		
..... Scrolling Messages Banner.....			
ScrlLock		Scan	
Skip		NCSL	

Figure 30. System Configuration Menu

- **Device ID:** Type desired name of device. This gives device a unique and meaningful name, which is important with multiple Paragon units. Default name is “UMT8 HWII”.
- **Display All Computers:** By setting this option, the system administrator can allow or disallow users to view all devices on the OSUI, even if the user doesn’t have the security privileges to access them. Default setting is No.
- **Logoff Time Out:** Amount of time – in minutes – before an inactive user is logged out of the Paragon system.
 - **On/Off:** Use <↑> and <↓> keys to toggle On/Off.
 - **Time:** Type a number from 01 to 99, or use <↑> and <↓> keys to increment or decrement. Default setting is Off/05 minutes.
- **Operation Mode:** There are 3 modes:
 - **Private:** A computer can be accessed exclusively by one user at a time.
 - **Public View:** While a computer is being accessed by one user, another user can select and view their video. There are messages posted when the Public View mode is being exercised.
 - **PC Share:** A computer can be selected and accessed by more than one user, but only one user can be in control at any one time. If the user in control is idle for a duration specified in the **PC Share Timeout** field another user can take control of the PC.

Use <↑> and <↓> keys to select “Private”, “Public View”, or “PC Share”. Default setting is “Private”.

- **P-View Admin Silent:** When Public View mode is being exercised, the user in control of a computer is notified that another user is viewing their video (Figure 31). However, when **P-View Admin Silent** is set to Yes, administrators can view other user's video without causing a viewing notification message to appear. Use <↑> and <↓> keys to toggle Yes or No. Default setting is No

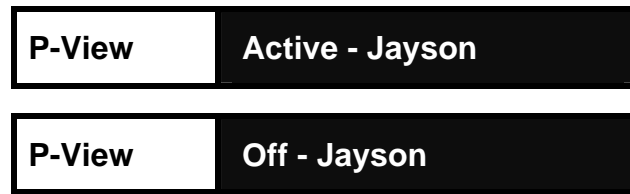


Figure 31. Public View Messages

- **PC Share Timeout:** If the **Operation Mode** is set to **PC Share**, and a computer has been selected by more than one user, the first user to operate the console (keyboard or mouse) will have control of the computer. However, another user can gain control of the computer after it has been idle for a duration exceeding the **Timeout** limit. Default is 01 seconds.
 - **Login Blank:** Blanks the Login screen after user console is idle for a specified amount of time in minutes. This acts as a screen saver to protect the monitor. When this screen is blanked, press any key to bring back the Login screen.
 - **On/Off:** Use<↑> and <↓> keys to toggle On/Off.
 - **Time:** Type a number from 01 to 99, or use <↑> and <↓> keys to increment or decrement. Default setting is Off/05 minutes.
 - **Allow Blank Password:** Use <↑> and <↓> keys to toggle Yes or No. Default setting is No. This field controls whether a user may specify a blank password.
-
- Note:** If this field is set to No, a user may not set a blank password. A newly created user has by default no password, unless the user or administrator sets one.
-
- **Default Login Name Blank:** Use <↑> and <↓> keys to toggle Yes or No. Default setting is Yes (login name will not appear). This field controls whether the default login name appears in the user name field of the Login Menu.

User Configuration

User Configuration Menu (Figure 32 & 33) enables administrator to add, delete, and edit user names and security rights, and displays current connection status for each user.

1. Use <↑>, <↓>, <←>, <→>, <Tab>, <Shift-Tab>, <PageUp>, <PageDown>, <Home>, and <End> keys to move within menu. Press <Enter> to edit field. Highlighted area will turn green. When editing is complete, either press <Enter> to save changes or press <Esc> to cancel them.
2. This menu displays one user's information per line.
 - **User:** Login user name.
 - **Name:** Displays and edits system user names. User names are not case sensitive. Type up to 8 characters to change a name.

Note: The special user name **Admin** cannot be changed.

 - **Group:** Displays group IDs of user. See **Appendix A: Paragon Security — Group ID Settings**.
 - **Adm:** Indicates whether user has administrator privileges. Use <↑> and <↓> keys to toggle Yes or No. Default setting is No.

3. **Connection:** Press <Tab> or <→> key to move to right-hand menu page. A connection page is displayed (Figure 33). Connection column shows status of each user and displays channel to which any active user is currently connected.
4. **Adding A New User:** To add a new user, press <Insert>. A new default user name will be added. Edit default name to user name desired. Maximum number of users is 127.
5. **Deleting A User:** Move highlight bar to a user line, and press <Delete>. Highlighted user will be removed from system.

User Configuration							1/1	→
User:	ADMIN	Page:						
Name	Adm	Group						
-----	-----	--	--	--	--	--		
ADMIN	Yes	00	--	--	--	--		
User01	No	00	--	--	--	--		
User02	No	00	--	--	--	--		
User03	No	00	--	--	--	--		
User04	No	00	--	--	--	--		
User05	No	00	--	--	--	--		
User06	No	00	--	--	--	--		
User07	No	00	--	--	--	--		
..... Scrolling Messages Banner.....								
ScrlLock Scan Skip NCSL								

Figure 32. User Configuration Menu

Note: Pressing the <Tab> or <→> key to move to the far right of the **User Configuration Menu** will display right portion of the menu (Figure 33.)

User Configuration			
User:	John	Page:	1/1 ←
Name	Connection		
-----	-----		
ADMIN	None		
Jayson	Fax-Server		
Usera	None		
Userb	None		
Userc	None		
Susan	WinsNT-east		
John	None		
..... Scrolling Messages Banner.....			
ScrlLock		Scan	Skip NCSL

Figure 33. Connections In User Configuration (Right portion of User Configuration Menu)

6. **Login As A New User:** Press <L> while viewing the **User Configuration Menu**. User ID will appear on login menu, prompting login.

Channel Configuration

Channel Configuration Menu (Figure 34) enables administrator to edit or initialize a CIM. Administrator can change device names, individual computer scan rates, device type, and group IDs associated with each computer or device

When Channel Configuration changes are saved, Paragon will update each CIM as necessary.

Channel Configuration			
UMT8 HWID	Page:	3/4	→
Ch ID	Name	Scn	Device
1		03	CPU
2	NT4.0 Mail	03	CPU
3	Wins95.Bob	03	CPU
4	Wins98.Jack	03	CPU
5	MX4-Wing.2	--	
6	NT4.0-Fax	03	CPU
7	MC2-16.Reg1	--	
8	UMT8-Wing.4	--	
..... Scrolling Messages Banner.....			
ScrlLock Scan Skip NCSL			

Figure 34. Channel Configuration Menu

1. Use <↑>, <↓>, <←>, <→>, <Tab>, <Shift-Tab>, <PageUp>, <PageDown>, <Home>, and <End> keys to move within menu. Press <Enter> to edit field. Highlighted area will turn green. When editing is complete, either press <Enter> to save changes or press <Esc> to cancel them.
2. This menu displays channel information – one device per line.
 - **Ch. ID:** Channel ID number.
 - **Name:** Displays and enables editing of device name. Device names are case sensitive and may be up to 12 characters.
 - **Scn:** Displays device's individual scan rate. Type a number from 01 to 24, or use <↑> and <↓> keys to increment or decrement scan rate. Default setting is 03 seconds.
 - **Device:** Displays type of connected device. Use <↑> and <↓> keys to edit a device type. If a type other than computer type (CPU) is selected, it is assumed that a Raritan's KVM switch has been connected to the channel according to the installation procedure for **Multi-Tier Installation**. A default device name is created when a KVM switch is selected. It is highly recommended that you change the name to something meaningful, as the name will be programmed to the CIM associated with the device.

Note: Many Raritan KVM Switches are Paragon Ready™, and as a result, require no configuration when connected as a tiered device to Paragon — including second or third tier UMT8 units.

Note: If you have more than one path connecting to MX4, all channels should be named the same to ensure that Paragon will configure the tier channels properly.

Note: While cursor is on **Device** column, pressing <Tab> or <→> key will display right half of **Channel Configuration Menu** (Figure 35.)

Channel Configuration									
UMT8 HWII					Page:		3/4	←	
Ch	ID	Group							

1	--	--	--	--	--	--	--	--	
2	00	--	--	--	--	--	--	--	
3	--	--	--	--	--	--	--	--	
4	--	--	--	--	--	--	--	--	
5	--	--	--	--	--	--	--	--	
6	00	--	--	--	--	--	--	--	
7	--	--	--	45	--	62	--	--	
8	--	23	--	--	--	--	--	--	
..... Scrolling Messages Banner.....									
ScrlLock			Scan			Skip			NCSL

Figure 35. Channel Configuration – Right Portion

- **Ch. ID:** Channel ID number.
- **Group:** Displays security groups that device is associated with. See **Appendix A: Paragon Security — Group ID Settings**.

Keyboard Type

Paragon’s OSUI supports English, French, or German keyboard mapping. When **Item 4** on the **Administration Menu** is selected, the keyboard type field will be highlighted. After <Enter> is pressed, the field will turn green. Use the <↑> and <↓> keys to select keyboard type. When selection is completed, press <Enter> to save changes.

Note: The keyboard type is only applied to the User Station where this selection has been made.

Refresh Configurations

Select **Item 5 — Refresh Configurations** — to refresh the database of all user stations from the UMT8 database.

Appendix A: Paragon Security – Group ID Settings

The default group ID setting for all connected users and computers is a group ID of “00”. These IDs are called “group” IDs because each user ID# can have one or more users belonging to it, and each computer ID# can have one or many computers belonging to it. Paragon’s system security features enable assignment of group IDs (from 00 to 99) to both users and computers to limit access throughout the system.

	<u>User Groups</u>	<u>Computer Groups</u>
Available Group IDs for Assignment	00 – 99	00 – 99
Maximum Number of Group IDs Which Can Be Assigned	5	8

Users and computers communicate according to the following Group ID access rules:

<u>GROUP ID FOR USERS</u>	<u>CAN ACCESS COMPUTERS WITH GROUP IDs OF</u>
00	00 through 99 (all computers)
For IDs 01 through 09: 0X through 0X <i>For example:</i> 05	00, 0X; and X0, X1, X2, X3, X4, X5, X6, X7, X8, and X9 00, 05; and 50, 51, 52, 53, 54, 55, 56, 57, 58, and 59
For IDs 10 through 99: X0 through X9 <i>For example:</i> 98	00, 0X, and exact same computer ID# as the user’s ID# 00, 09 and 98
<u>GROUP ID FOR COMPUTERS</u>	<u>CAN BE ACCESSED BY USERS WITH GROUP IDs OF</u>
00	00 through 99 (all users)
For IDs 01 through 09 0X through 0X <i>For example:</i> 08	00, 0X; and X0, X1, X2, X3, X4, X5, X6, X7, X8, and X9 00, 08; and 80, 81, 82, 83, 84, 85, 86, 87, 88, and 89
For IDs 10 through 99 X0 through X9 <i>For example:</i> 12	00, 0X, and exact same user ID# as the computer’s ID# 00, 01, and 12

Systems Requiring High Security

We recommend assigning IDs of “10” through “99” to computers requiring high protection, because they are less accessible than computers with IDs of “00” or “01” through “09”.

Main System Administrator and Assistant Administrators

Although any user may be assigned Administrative Privileges, we recommend the user ID “00” for the Main System Administrator, and user IDs “01” through “09” for Assistant Administrators, because of the broad scope of access that these IDs provide.

Appendix B: UMT8 Front Panel Display & Controls



Figure 36. UMT8 Front Panel

Control buttons and LCD display provide systems management and technical support functions. For most situations there is no need to use the front panel beyond viewing status.

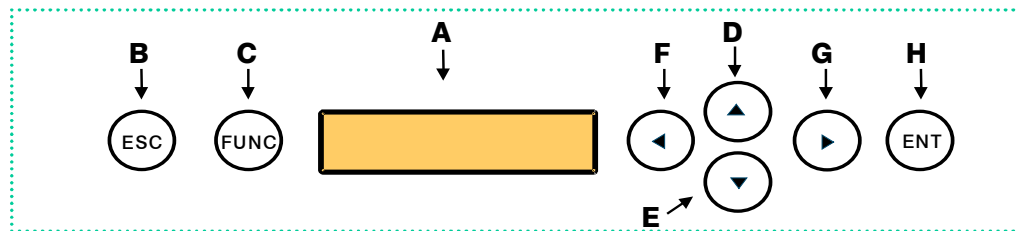


Figure 37. UMT8 Front Panel Buttons

Front Panel Components and Functions (Figure 37)

- **LCD (A)** shows status of system and indicates functions that can be selected by pressing front panel control buttons.
- **ESC button (B)** is used for canceling displayed function and returning system to normal state.
- **FUNC button (C)** is used to select various functions.
- **↑, ↓, ←, and → buttons (D), (E), (F) and (G)** are used for selecting or setting various options, depending on function being performed.
- **ENT button (H)** is used for confirming and executing selected function.

Start-Up Display

When UMT8 is powered on, it performs a start-up test. It checks each channel and user port to ensure proper operation.

Normal Display

After start-up test, LCD panel displays 2 lines of messages (Figure 33):

- Line 1: running message **“Raritan Computer Paragon: UMT8/1 Ready”**.

UMT8 is default name of Matrix Switching Unit (this name may be changed through the **System Configuration Menu**). “/1” is the UMT8’s banked expansion unit ID. In this example, it is the main unit. All expansion units will have the same device name as the main unit, but with different unit ID numbers.

Note: Banking exemplifies Raritan’s dedication to future development. Banking Technology, a potentially improved KVM configuration design that conceivably banks or links Matrix Switching Units directly to each other, is currently non-functional. As a result, all banked expansion unit IDs will be represented by “/1.”

- Line 2: User port status.

User port status displays a scrolling status of all 8 user ports, one user port per second. User's active channel, Ch # from 1 to 256, is displayed after user port number.



Figure 38. LCD Normal Display

Power Up Option

During power up, if you hold down <Func> button, UMT8 will clear database and reset to defaults (Figure 39). Confirm function by pressing <Ent> button.



Figure 39. Power Up Clear Database

Function Selection Screen

Several administrative functions (Figure 40) can be performed from the UMT8's front panel.

Set LCD Contrast
Display Ver./SN
Test User UST1
Test Chan. UKVM
Set Bank ID
Re-Configure
Reset UMT8

Figure 40. LCD Functions

To select a function:

Press **FUNC** to enter Function selection mode (Figure 41). Use **↑** or **↓** buttons to scroll through Function List. Press **ENT** to select displayed function and follow instructions for each specified administrative function as outlined in the next section. Press **ESC** at any time to return to Normal Display.



Figure 41. Function Selection

Administrative Function Instructions**1) Set LCD Contrast Function**

Modifies contrast level of front panel LCD Display (Figure 42).

Press **↑** or **↓** buttons to increase or decrease contrast, and press **ESC** to return to normal display.



Figure 42. Set LCD Contrast

Note: LCD contrast can also be adjusted by holding **←** button and pressing **↑** and **↓** buttons anytime during normal display.

2) Display Ver./SN (Firmware Version and Serial Number) Function

Displays current version of firmware and unit's serial number. (Figure 43).

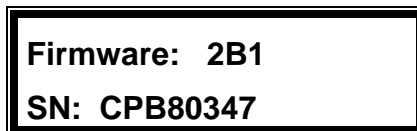


Figure 43. Display Ver. and SN

3) Test User Station Function

Used by administrator to check if user stations (UST1s) are functioning properly. (Figure 44).

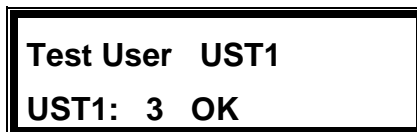


Figure 44. User Station Test

Press **↑** or **↓** buttons to change user port number. Display will read "OK", "None", or "Failed", as appropriate. Press **ESC** to return to normal display.

If a "failed" condition is detected, make sure Category 5e UTP cable is installed properly and secured, or try using another UST1 to see if UST1 under test has become defective.

4) Test Channel CIM (UKVM) Function

Used by administrator to check if Computer Interface Module (CIM) is functioning properly. (Figure 45).

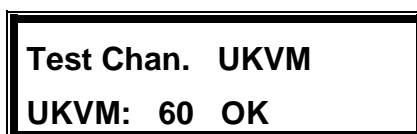


Figure 45. Channel CIM (UKVM) Test

Press **↑** or **↓** buttons to change channel number. Display will read “OK”, “None”, or “Failed”, as appropriate. Press **ESC** to return to normal display.

If a “failed” condition is detected, make sure Category 5e UTP cable is installed properly and secured, or try using another CIM (UKVM) to see if CIM under test has become defective.

5) Set Bank ID Function (Figure 46).

Note: Banking exemplifies Raritan’s dedication to future development. Banking Technology, a potentially improved KVM configuration design that conceivably banks or links Matrix Switching Units directly to each other, is currently non-functional. As a result, all Bank IDs should be set to 1.

Press **↑** or **↓** buttons to **ensure that Bank ID is set at “1”**. Press **ESC** to return to normal display.



Figure 46. Set Bank ID

6) Re-Configure Function

Paragon will automatically configure the system as computers or devices are added or removed. However, the system administrator can use this function to scan and re-configure the system manually (Figure 47). When complete, it will return to normal display.



Figure 47. Auto Configure

7) Reset UMT8 Function

Enables restart of UMT8 unit as if unit’s power had been physically turned off and back on again. However, UMT8 will not perform start-up test unless **ENT** button is held down during restart.

With UMT8 firmware 2B1 and UST1 firmware 2K10 or higher either a power reset or a factory “function” reset can be performed from the front panel of the UMT8 using shortcut button combinations.

Power Reset

Simultaneously hold the up and down arrow buttons on the front panel of the UMT8 for about 3 seconds. When the front panel stops scrolling then release the buttons.

Factory “Function” Reset

Simultaneously hold the up and down arrow buttons on the front panel of the UMT8, and also hold the **FUNC** button down. After the front panel stops scrolling the continue to hold the **FUNC** button down, but release the up and down arrow buttons, then release the **FUNC** button.

Appendix C: UST1 Direct Mode

UST1s set in Direct Mode (and their connected user consoles) can be connected directly to a Paragon CIM (and its connected server) for emergency “crash cart access,” without having to connect through a Matrix Switching Unit (UMT8). Direct Mode requires UST1/UMT8 firmware versions 2K10/2B1 or higher.

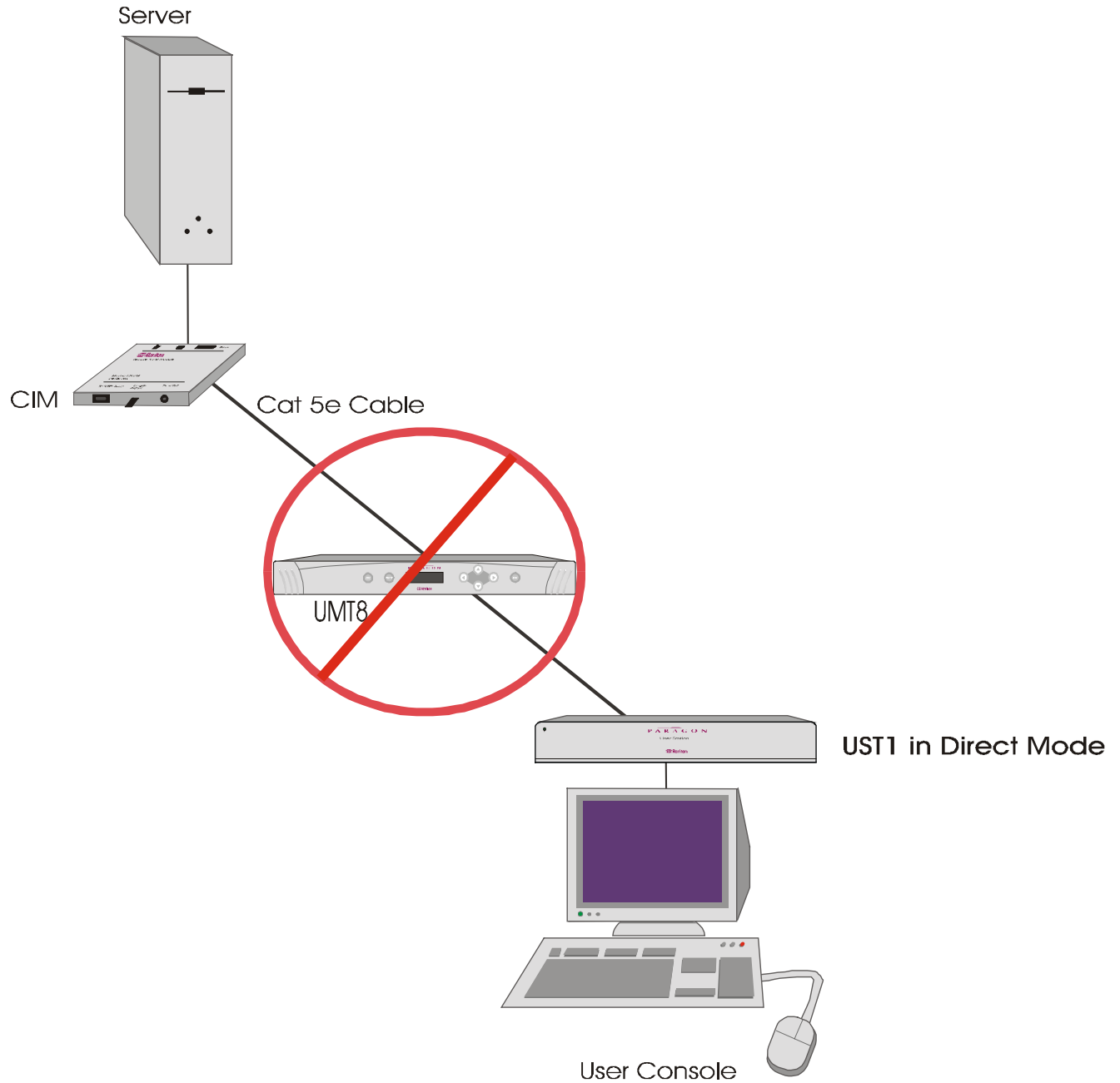


Figure 48. UST1 Direct Mode

CIM models capable of accepting a UST1 Direct Mode connection include:

- UKVMC
- UKVMP
- UKVMPD
- UKVMP2
- USKVMC
- USKVMP
- USKVMPD
- USKVMPA
- UUSBPD

Setting a UST1 to Direct Mode

1. Power OFF the UST1.
2. Connect desired CIM directly to the UST1 via Category 5e UTP cable.
3. At the user console connected to the UST1, simultaneously hold down the <Ctrl> + <Alt> keys and keep them held down.
4. With the <Ctrl> + <Alt> keys held down, power ON the UST1, and continue to hold down the <Ctrl> + <Alt> keys.
5. There will be two beeps. At the second beep a message will display on the user console monitor that says "DIRECT Mode: CIM connected".
6. Release the <Ctrl> + <Alt> keys.
7. The "DIRECT Mode: CIM connected" message will disappear from the monitor after it has displayed for a total of 10 seconds.
8. Congratulations! The UST1 is now set in Direct Mode.

Note: If the Category 5e UTP cable is disconnected from either the CIM or the UST1 in the Direct Mode connection for a time period greater than 3 to 4 seconds, then Direct Mode will be cancelled. To re-establish Direct Mode on the UST1, follow the steps above.

Returning a UST1 to Normal Paragon Mode

1. Power OFF the UST1.
2. Disconnect the Category 5e UTP cable from the CIM.
3. Connect the Category 5e UTP cable from the UST1 into a UMT8.
4. Connect the UMT8 to the CIM via Category 5e UTP cable.
5. Power ON the UST1.

Appendix D: Personal Computer Access via Z-CIM

Paragon UMT8 firmware 2B1 and UST1 firmware 2K10 or higher supports access to a personal computer via a Z-CIM —UKVMSPD or UKVMSC (Figure 49). This feature gives the User Station (and attached User Console) control of the local user's PC, in addition to the Paragon matrix. This consolidated access saves desk space and reduces the cost of additional desktop KVM peripherals.

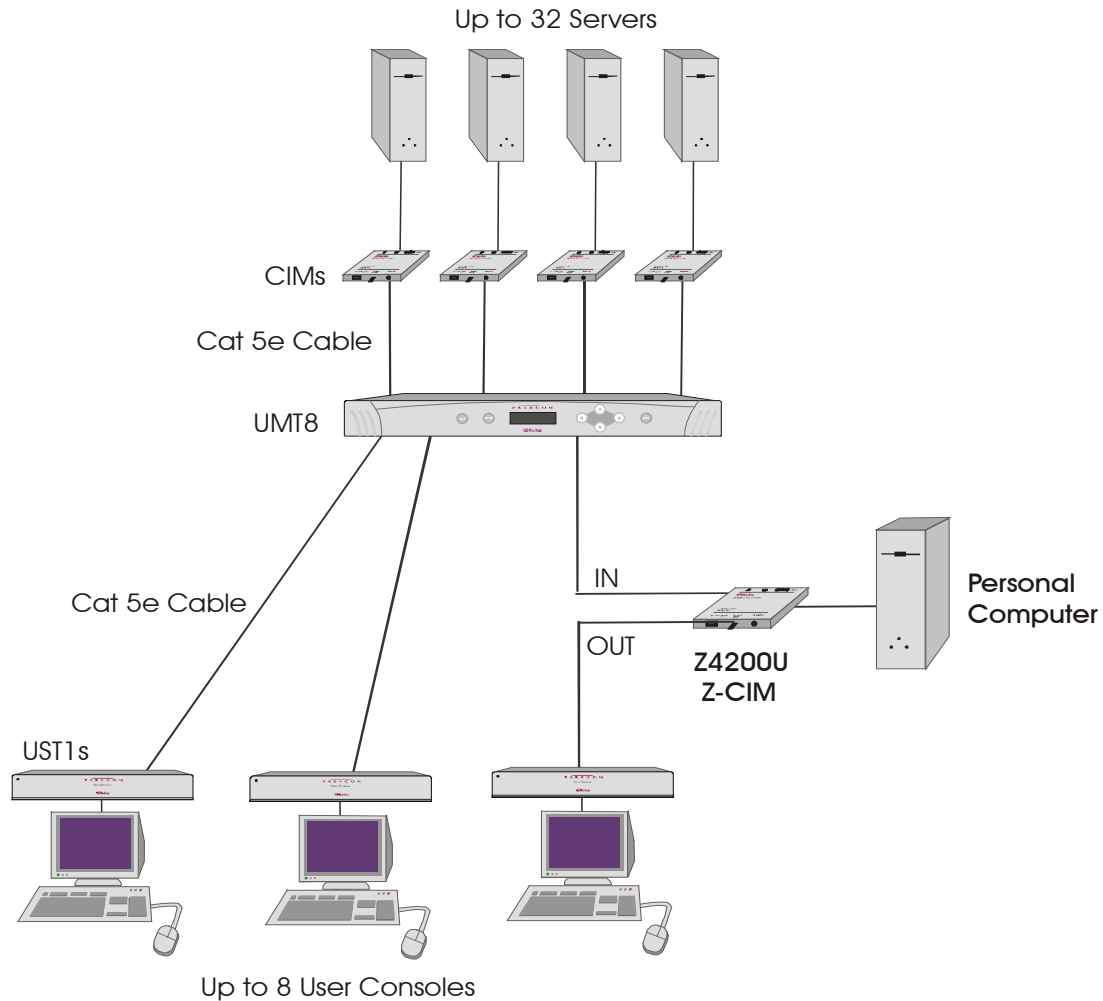


Figure 49. Personal Computer Access via Z-CIM

Installing a Z-CIM for Personal Computer Access

1. Set up Paragon as per Basic Installation instructions
2. Choose the UST1 and user console that will access both a local Personal Computer and the Paragon matrix.
3. Trace the Category 5e UTP cable from the chosen UST1 to the UMT8 and disconnect this cable from the UMT8 channel port. Reserve this channel port for connection from the Z-CIM.
4. Add the Z-CIM — UKVMSPD or UKVMSC — in between the chosen User Station (UST1) and the Paragon Matrix Switching Unit (UMT8):

- Connect the Category 5e UTP cable from the chosen UST1 to the UTP OUT port on the Z-CIM. Connect another Category 5e UTP cable to the UTP IN port on the Z-CIM, and connect the other end of this UTP cable to the reserved channel port on the UMT8.
5. Connect the Personal Computer to the Z-CIM:
 - UKVMSPD: Attach the CIM to the computer via its 15-pin male video port, connecting it to the 15-pin female video port on the computer. Connect keyboard and mouse cable legs attached to the UKVMSPD to appropriate 6-pin mini-DIN mouse and keyboard ports on computer.
 - UKVMSC: Connect DB26 male end of CCPnn cable to DB25 female port on UKVMSC Z-CIM. Connect the other end of the CCPnn cable to appropriate 6-pin mini-DIN mouse and keyboard ports, and the HD15 video port on the Personal Computer.
 6. Power ON the Personal Computer.

Activate Local PC Mode on UST1

1. Login from the chosen User Station, which will have access to both a local Personal Computer and the Paragon matrix. .
2. Press <F4> to go the **User Profile Menu**.
3. Use the <↑>, <↓>. Or <Tab> to go to the **Local PC** field.
4. Press <Enter>. The yellow highlight will turn green.
5. Use the <↑> or <↓> keys to select "On."
6. Press <Enter>. The highlight will turn yellow.
7. Press <S> to save the change and return to the **User Profile Menu**, or press <Esc> to return to the **User Profile Menu** without saving this change.

Operating Local Personal Computer Access

To access the local personal computer rapidly press the <Home> key twice while viewing any Paragon On-Screen User Interface (OSUI) menu. The user will automatically be switched to the local or "home" PC.

To return to Paragon switching, simply bring up Paragon's OSUI by rapidly pressing the hot key activator twice. Then press <F2> to bring up the **Selection Menu**, showing all servers and devices connected to Paragon.

Appendix E: HubPac

The Paragon Hub Pac (part number HUBPAC8-RK) expands user access capability to a maximum of 32 users.

CIM models capable of accepting a HubPac include:

- UKVMC
- UKVMP
- UKVMPD
- USKVMC
- USKVMP
- USKVMPD



Figure 50. Paragon HubPac

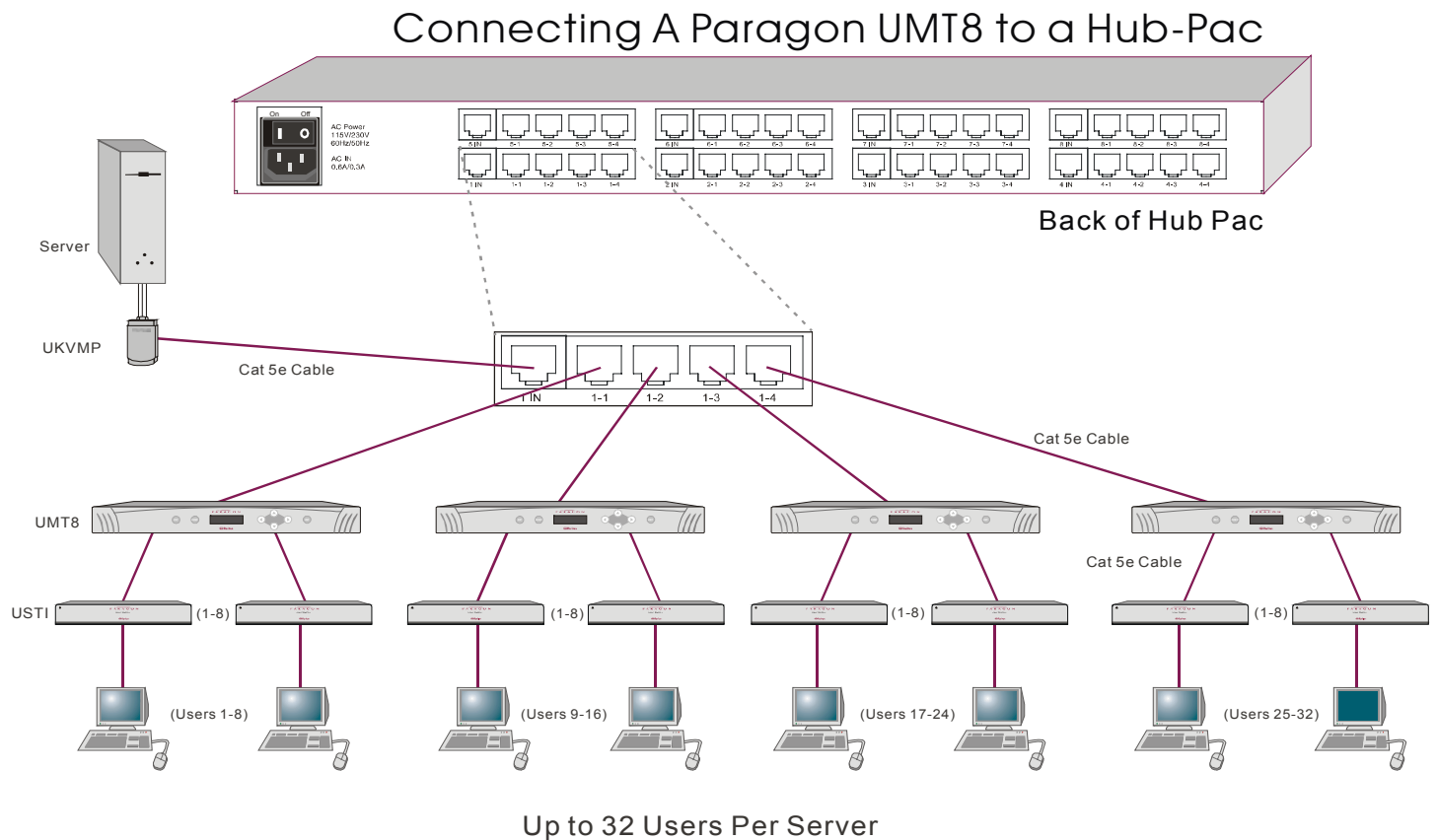


Figure 51. Installing a HubPac

Installing a HubPac

1. Follow the Basic Installation instructions to create 4 Paragon UMT8 Matrix Switching unit configurations with 8 users (UST1s) each (Figure 51).
2. Power OFF each Matrix Switching Unit (UMT8)

Note: Prior to installation all UMT8 units and HubPac units must be powered OFF. Computers and User Stations (UST1s) to be connected can be in a powered ON state.

3. Install one HubPac, creating an 32 user by 8 server configuration:

- a) Attach server(s), via CIM, to HubPac:

Note: Up to 8 servers can be connected to one HubPac. Each 5-port cluster on the HubPac represents one server connection, with four associated HubPac user ports. When each HubPac user port in a cluster is attached to a separate Paragon UMT8, 32 users (4 HubPac user ports x 8 users per UMT8) can have access to each server.

- Connect CIM to server – see **Appendix L: Specifications** for specific instructions on connecting different CIM types to a server.
- Connect one end of a Category 5e UTP cable to RJ45 port on CIM.
- Connect the other end of cable to the RJ45 1-IN port on back of HubPac.
- Power ON server.
- Repeat above steps to connect the remaining servers, connecting the Category 5e UTP cable to the HubPac at the RJ45 2-IN, 3-IN, 4-IN, 5-IN, 6-IN, 7-IN, and 8-IN port for each consecutive server (2 through 8) added.

- b) Connect HubPac to each UMT8 by repeating all of the following steps for each 5-port cluster on HubPac:

Note: There are 8 five port clusters on the HubPac. For each cluster the number in front of the RJ45 IN port represents the cluster number. For example, cluster 1's first RJ45 port is 1 IN, cluster 2's is 2 IN, etc... In the instructions below, "X" represents the cluster number (1 through 8).

- Connect one end of a Category 5e UTP cable to the RJ45 X-1 port on back of HubPac.
- Connect the other end of the cable to channel port # X on the back of UMT8 number 1.
- Connect one end of a Category 5e UTP cable to the RJ45 X-2 port on back of HubPac.
- Connect the other end of the cable to channel port # X on the back of UMT8 number 2.
- Connect one end of a Category 5e UTP cable to the RJ45 X-3 port on back of HubPac.
- Connect the other end of the cable to channel port # X on the back of UMT8 number 3.
- Connect one end of a Category 5e UTP cable to the RJ45 X-4 port on back of HubPac.
- Connect the other end of the cable to channel port # X on the back of UMT8 number 4.

4. Connect power cord to back of HubPac. Power ON HubPac
5. A HubPac represents 8 servers, and utilizes 8 channels on each UMT8. Since 32 channels are available on a UMT8, up to 3 more HubPacs $((32-8) = 24/8 = 3)$ can be added for a full 32 user by 32 server configuration. Follow steps 3 & 4 above for each additional HubPac to be added.
6. Power ON each of the UMT8s.

Channel Configuration

Paragon recognizes a HubPac as an extension of a CIM, rather than as a device. As a result, each server connected to the HubPac can be configured as a directly connected server would be.

1. On the **Selection Menu** (by channel ID number) each green line indicates an active channel (CIM/computer). Highlight the CIM/server to be selected by using the **<↑>**, **<↓>**, or **<PageUp>**, **<PageDown>** keys. Press **<Enter>**.
2. Normal computer access indicates successful connection. If necessary, adjust the computer's video quality by keying on **<+>** or **<->** while in **Hot Key** mode.
3. Enter a meaningful name for each server (channel).
 - a) Press **<F5>** for **Administration Menu**. Select **Channel Configuration** submenu with **<↑>** or **<↓>** keys and press **<Enter>**.
 - b) **Channel Configuration Menu**. Press **<↑>** or **<↓>** to highlight (in yellow) Name field for channel ID where CIM/computer was just installed. Press **<Enter>**. Highlight turns light blue.
 - c) Edit name (turns green when typing begins). Press **<Enter>** when completed. Press **<S>** to save new name.
 - d) Press **<F2>** to return to **Selection Menu** (by channel ID number). Verify that new name appears on **Selection Menu** in green.
4. Repeat for each CIM/server desired (up to 32).

Appendix F: CIMPac

The Paragon CIMPac (part number CIM-PAC8R) expands user access capability to a maximum of 16 users.



Figure 52. Paragon CIMPac

Connecting A Paragon UMT8 to a CIM-PAC

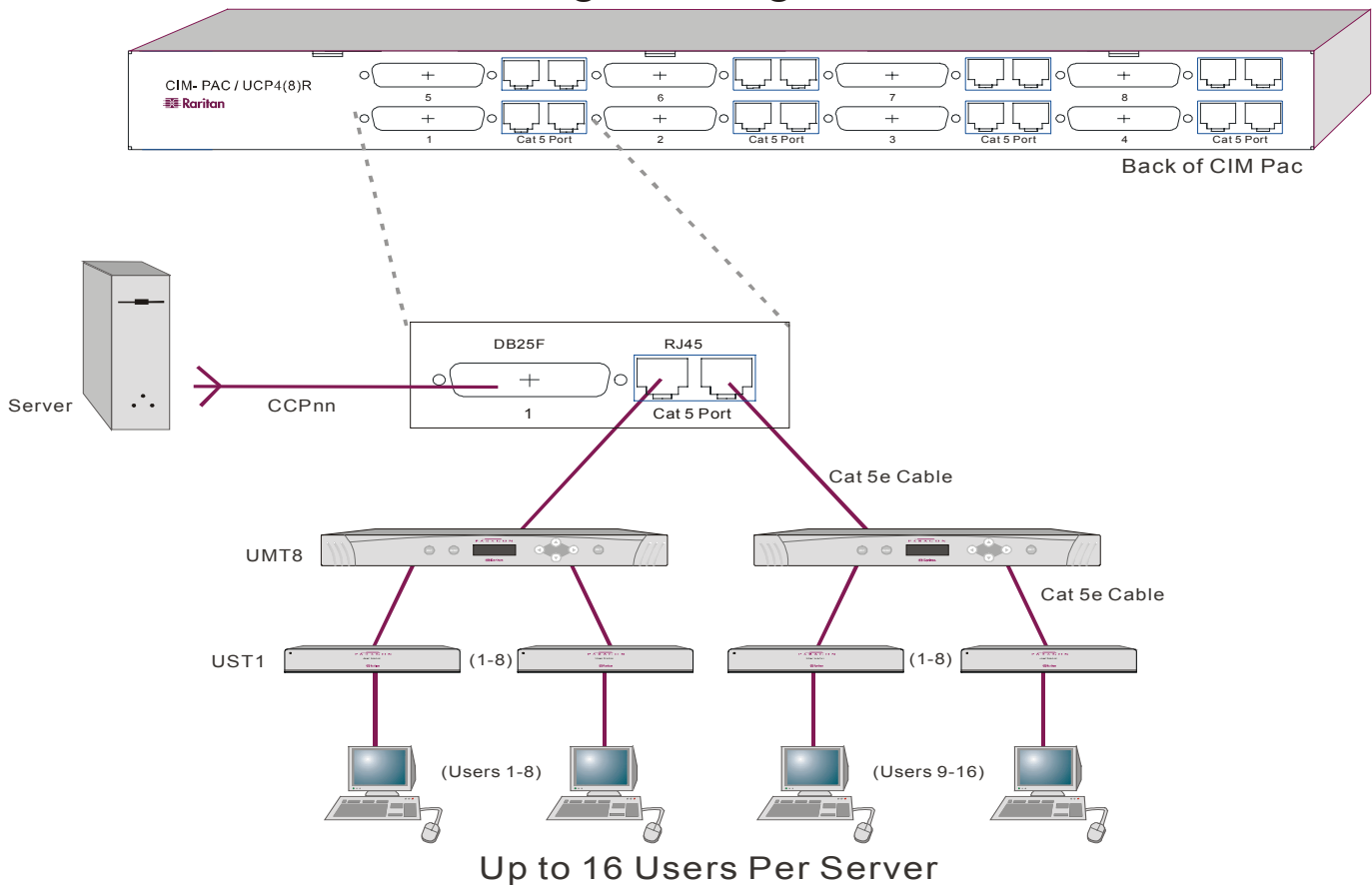


Figure 53. Installing a CIMPac

Installing a CIMPac

1. Follow the Basic Installation instructions to create 2 Paragon UMT8 Matrix Switching unit configurations with 8 users (UST1s) each (Figure 53).
2. Power OFF each Matrix Switching Unit (UMT8)

Note: Prior to installation all UMT8 units and CIMPac units must be powered OFF. Computers and User Stations (UST1s) to be connected can be in a powered ON state.

3. Install one CIMPac, creating an 16 user by 8 server configuration:

- a) Attach server(s) to CIMPac:

Note: Up to 8 servers can be connected to one CIMPac. Each 3-port cluster on the CIMPac represents one DB25 server connection, with two associated Cat 5 CIMPac user ports. When each CIMPac user port in a cluster is attached to a separate Paragon UMT8, 16 users (2 CIMPac user ports x 8 users per UMT8) can have access to each server.

- Connect one end of a CCPnn cable to server, attaching the male HD15 video leg and the male 6-pin mini-DIN keyboard and mouse legs to appropriate video, keyboard, and mouse ports on server.
- Connect the other end of the CCPnn cable to the CIMPac, attaching the male DB25 end of the cable to female DB25 port 1 on the CIMPac.
- Power ON server.
- Repeat above steps to connect the remaining servers, connecting the CCPnn cable to the CIMPac at the DB25 2, 3, 4, 5, 6, 7, and 8 port for each consecutive server (2 through 8) added.

- b) Connect the CIMPac to each UMT8 by repeating all of the following steps for each 3-port cluster on the CIMPac:

Note: There are 8 three port clusters on the CIMPac. For each cluster the number under the DB25 port represents the cluster number. In the instructions below "X" represents the cluster number (1 through 8).

- Connect one end of a Category 5e UTP cable to the RJ45 Cat 5 Port immediately to the right of DB25 port X.
- Connect the other end of the cable to channel port # X on the back of UMT8 number 1.
- Connect one end of a Category 5e UTP cable to the second RJ45 Cat 5 Port to the right of DB25 port X.
- Connect the other end of the cable to channel port # X on the back of UMT8 number 2.

4. Connect power cord to back of CIMPac. Power ON CIMPac.
5. A CIMPac represents 8 servers, and utilizes 8 channels on each UMT8. Since 32 channels are available on each UMT8, up to 3 more CIMPacs can be added for a full 16 user by 32 server configuration. Follow steps 3 & 4 above for each additional CIMPac to be added.
6. Power ON each of the UMT8s.

Channel Configuration

Paragon recognizes a CIMPac as an extension of a CIM, rather than as a device. As a result, each server connected to the CIMPac can be configured as a directly connected server would be.

1. On the **Selection Menu** (by channel ID number) each green line indicates an active channel (CIM/computer). Highlight the CIM/server to be selected by using the <↑>, <↓>, or <PageUp>, <PageDown> keys. Press <Enter>.
2. Normal computer access indicates successful connection. If necessary, adjust the computer's video quality by keying on <+> or <-> while in **Hot Key** mode.
3. Enter a meaningful name for each server (channel).
 - a) Press <F5> for **Administration Menu**. Select **Channel Configuration** submenu with <↑> or <↓> keys and press <Enter>.
 - b) **Channel Configuration Menu**. Press <↑> or <↓> to highlight (in yellow) Name field for channel ID where CIM/computer was just installed. Press <Enter>. Highlight turns light blue.
 - c) Edit name (turns green when typing begins). Press <Enter> when completed. Press <S> to save new name.
 - d) Press <F2> to return to **Selection Menu** (by channel ID number). Verify that new name appears on **Selection Menu** in green.
4. Repeat for each CIM/server desired (up to 32).

Appendix G: Overview Software

Paragon Overview Software is a PC Windows-based program that provides an interface with Paragon, enabling administrators to:

1. Maintain and change configuration data and OSUI settings offline
2. Back-up (save) a copy of the configuration data offline

Hardware Requirements

System Administrator can install and run the **Overview Program** from any PC with Internet Explorer installed.

Download Software

1. Download the Overview Program from Raritan's Web Site to a floppy diskette:
 - a) Open Internet Explorer and go to Raritan's Web Site at: <http://www.raritan.com>
 - b) Click the menu bar link to "Tech Support"
 - c) Select "Firmware Upgrades"
 - d) On the Web page that opens, click the hyperlink "Firmware Upgrades:"
 - e) Locate the execution file for Paragon Overview and click on the corresponding hyperlink.
 - f) Save the file to a floppy diskette

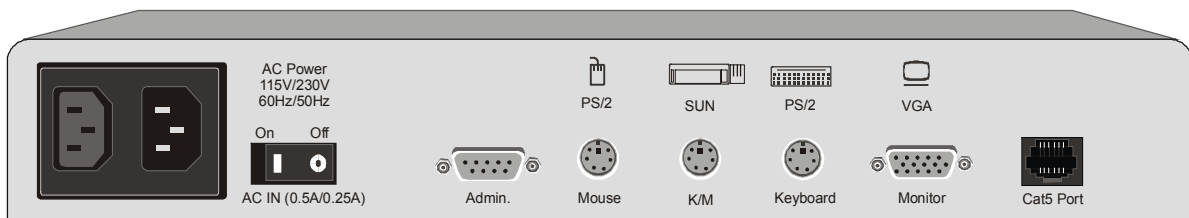


Figure 54. UST1 Back Panel – DB9 Admin Port

Connecting PC to UST1

1. Using a standard DB9 serial cable, plug DB9(F) into one of the Com ports on your PC.
2. Plug the other end DB9(M) into the Admin port of any UST1 connected to a base UMT8. (Figure 54).

Note: All users should be logged out of the Paragon system when making configuration data changes.

Operating Software

1. Start Program:

- a) Insert **Overview** Software diskette into floppy disk drive – presumably drive “A”
- b) Using Windows Explorer, locate the Overview.exe file on the diskette, and double-click
- c) The **Overview** program will open (Figure 55)

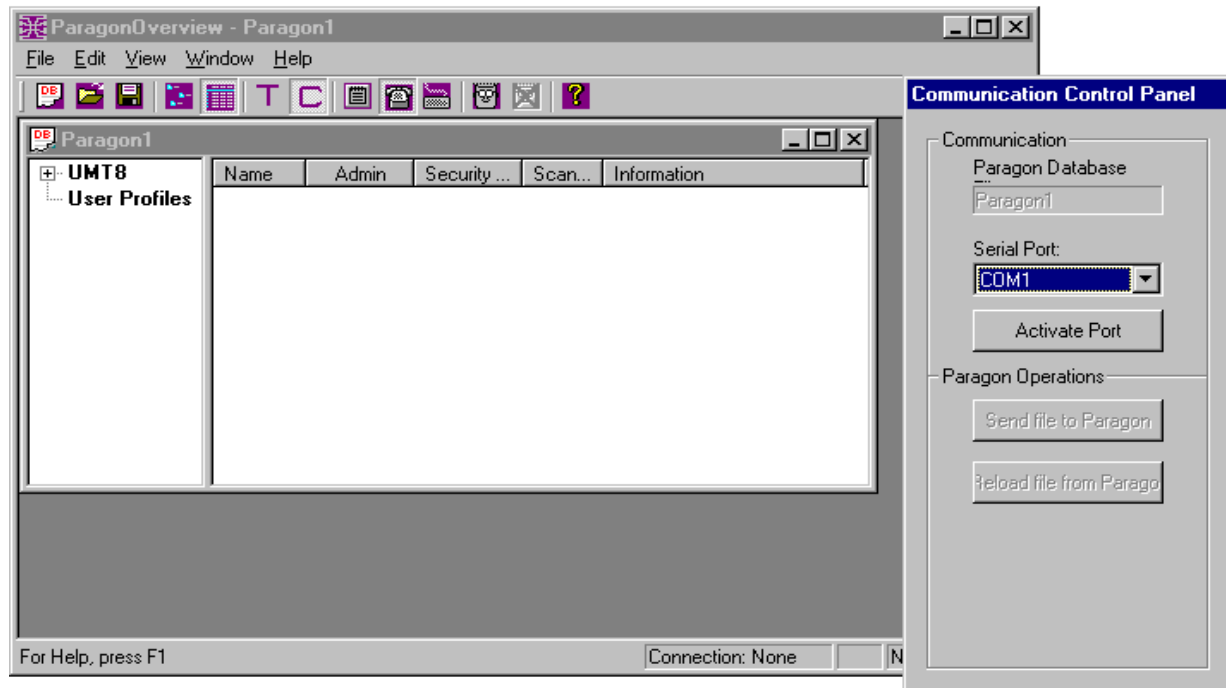


Figure 55. Paragon Overview Program Started

2. **Activate PC Communication and Login:** Activates PC serial port assigned to communicate with UST1.

From the Communication Control Panel (right side portion of Figure 55 select COM port to which the DB9 serial cable is installed – default is COM1. Click <Activate Port> button. Program initiates communication with UST1.

3. **Perform Administrator Login to Proceed:** Requires administrator authorization to access UST1.

At the **Login** Window (Figure 56), enter Administrator user name and password and click <OK>.



Figure 56. Overview Administrator Login

4. Connect to UST1 and download configuration: Downloads UST1's config file for offline editing at the PC.

Serial number from UST1 unit is retrieved and displayed in an information window. Click <OK> button to continue. A copy of configuration file will be downloaded from UST1 to PC. Maintenance functions can now be performed. A status window displaying "loading data from Paragon" will display during download, and user station keyboard and mouse operation will be temporarily suspended.

Edit User Profiles

Edit a user's profile. Click <User Profiles> on left side of main window to display user list.

Double-click the user you want to edit from the list. An **Edit** window will pop up to allow you to edit the profile. (Figure 57). Modify any field as required. Click <OK> to close the window.

Note: Overview only provides the ability to edit existing user profiles. User profiles may not be added or deleted through Overview, since the number of user profiles originally downloaded from the UST1 must match the number of user profiles uploaded from the offline configuration file created with Overview. If you wish to add or delete user profiles, you must do so at the UST1, without the use of Overview.

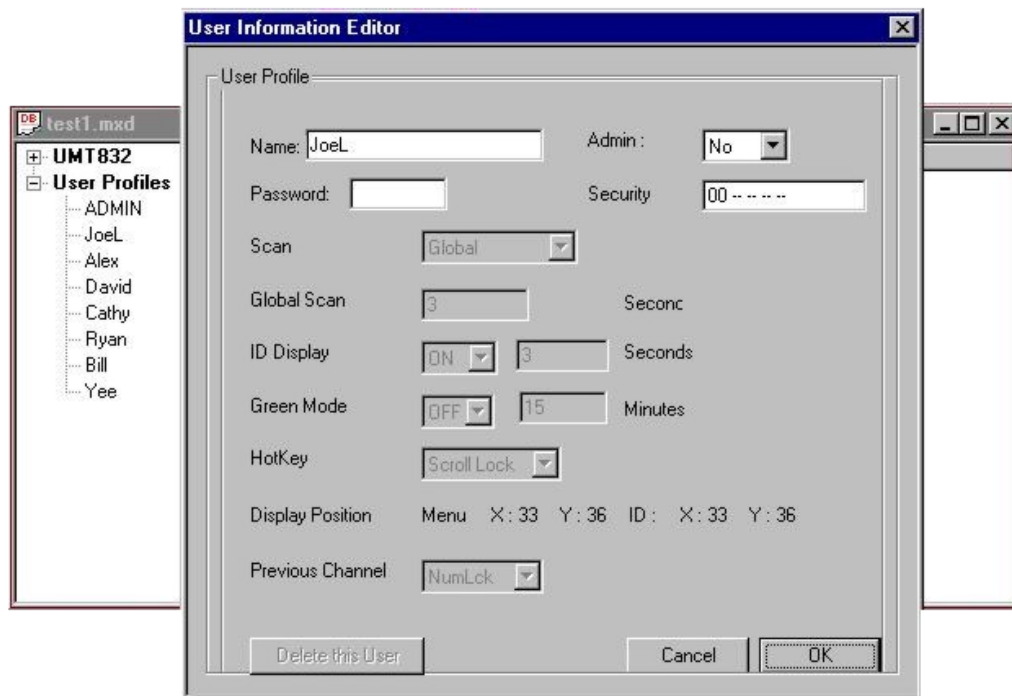


Figure 57. Edit User Profile

Edit Device Profiles

This feature is used to change computer names and profiles, either on base or tier Paragon, or second-tier Master Consoles. To edit a computer, open the device list by clicking the *square plus sign* on the left of the UMT8 name. Double click a computer or a second tier device from the list you want to edit. An **Edit** window will open to allow you to edit the device profile. (Figure 57).

Note: Overview only provides the ability to edit existing device profiles. Device profiles may not be added or deleted through Overview, since the number of device profiles originally downloaded from the UST1 must match the number of device profiles uploaded from the offline configuration file created with Overview. If you wish to add or delete device profiles, you must do so at the UST1, without the use of Overview.



Figure 58. Edit Device Profile

Save a Copy of Configuration File to a PC Disk - Backup

You can save – backup – a copy of the current configuration file to a PC disk file. The saved configuration can be opened and uploaded to the system, if necessary. From the File menu, select **Save** or **Save As** to backup the active configuration file to a PC disk file.

Upload Configuration File to System

After editing the user profiles, computers and/or other devices, the new configuration file must be uploaded to the UST1 to reconfigure the system. **Before uploading to the UST1, save a copy in a PC disk file for later reference.** To update the system configuration, click the **<Send file to Paragon>** button from the communication panel. The program will upload the new configuration file to the UST1 unit – during this upload, the unit's operation will be temporary suspended. To configure other UST1s use **Refresh Configurations – Item 5** on the **Administration Menu**.

Download Configuration File from UST1

From the communication panel, click the **<Reload Configuration file from Paragon>** button to download a copy of the configuration file from the UST1. This will override any currently stored configuration file on the PC. This feature allows you to update the configuration file on the PC if maintenance has been performed on the system from a user station.

Open a Saved Configuration File from a PC Disk File

From the File menu, select **Open** to open a copy of a previously saved configuration file from a PC disk file. Select the **<Send to Paragon>** button to upload this copy of configuration file to the connected UST1 unit.

Overview Troubleshooting

Program begins. After clicking <Activate Port> message appears saying “UMT8 device is not responding”.

- Make sure DB9 cable is plugged in to PC DB9 serial port properly.
- Make sure a proper Comm port number is selected.
- Recycle UST1 AC power. This will not affect computers connected to the UMT8.
- Serial port on PC may be defective.

After a period of trouble free software operation, clicking <Send to Paragon> causes Windows status bar to remain on the screen.

- Loose cable connection between PC and UST1.
- Serial communication between PC and UST1 may be broken. Press **<Ctrl+Alt+Del>** to bring up **Close Program** window. Select “Paragon System Administration Utilities” entry. If status is “Not responding” click **<End task>** to terminate program. Restart program from Start Menu. An alternative status indicates the program is waiting for a slow PC to perform.

PC has only DB25 serial port, not DB9.

- Convert a DB25 to DB9 using a standard adapter.

Appendix H: Paragon Update — Firmware Upgrade

The Paragon Update Utility is a Win32-based program that facilitates the transfer of firmware to Paragon units — Matrix Switching Unit (UMT8) and User Station (UST1). The Paragon Update Utility, and the latest versions of firmware, can be downloaded from Raritan's web site, at <http://www.raritan.com>

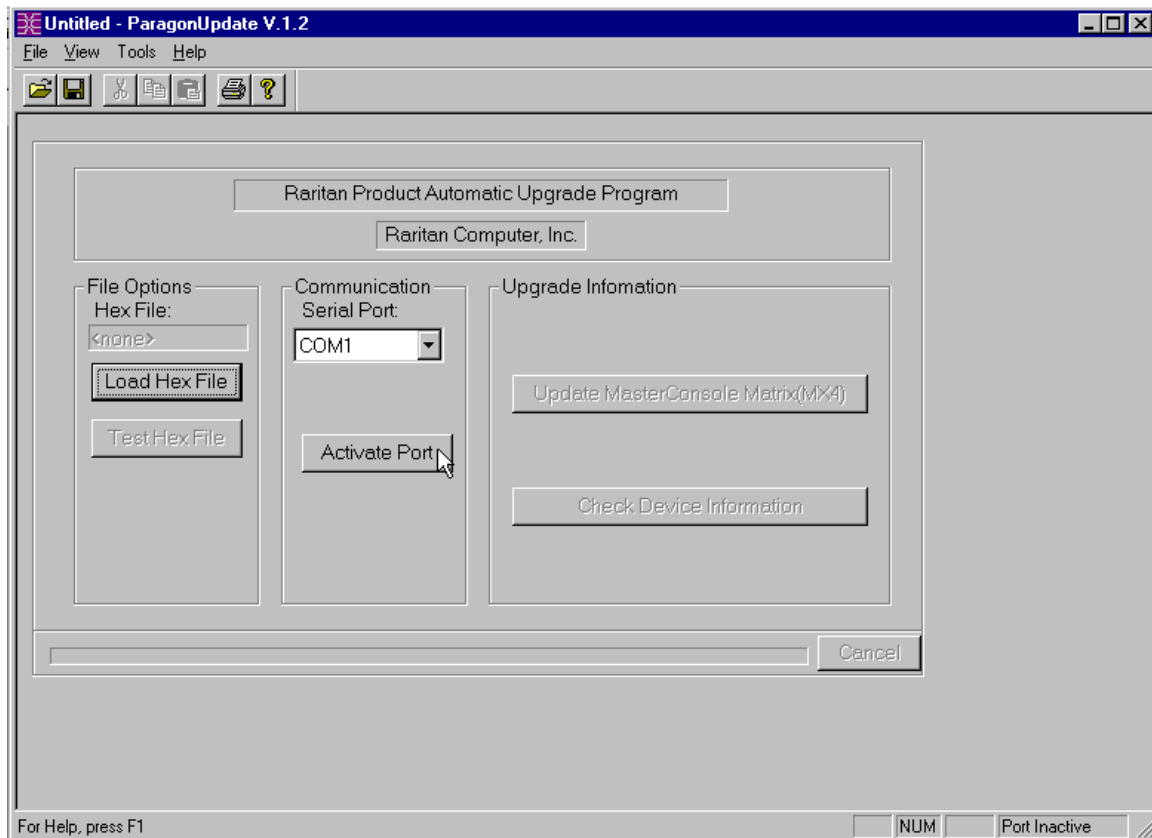


Figure 59. Paragon Update

Note: Before performing a firmware upgrade, be certain to read the release notes that are included with the firmware distribution on Raritan's website!

Note: All Paragon components and connected servers can remain powered ON during a firmware upgrade. Paragon's modular, redundant design ensures that these devices will not be affected during the update process.

Paragon Configuration Backup Instructions

Paragon Update is designed to execute the firmware uploading process without disturbing Paragon configuration data files. However, as an added precaution, many users prefer to backup these configuration files – which contain user profile and server name information.

To backup Paragon Configuration files, download the Paragon OverView program available from Raritan's web site, at <http://www.raritan.com>:

1. Download the Paragon OverView program available at the Raritan web site: <http://www.raritan.com>.
2. On any active Paragon User Station (p/n UST1), log into Paragon, and press **<F12>** to bring the on-screen user display to **Selection Menu by Name** (and not simply, "Selection Menu").

3. With the Paragon User Station displaying **Selection Menu by Name**, connect one end of a straight-through serial cable to the port labeled “Admin” on the back of the User Station (DB9F). Connect the other end of the cable to the serial port of any computer with Paragon OverView installed.

Note: To ensure reliable communication, use as short a serial cable as possible. Do not use a serial cable longer than 50 feet in length. Be sure to use a straight-through serial cable, and not a null modem cable.

4. On the attached computer, launch Paragon OverView by double-clicking on the icon.
5. Select the correct serial port (COM1 through COM4), and click <Activate Port> to initiate communication with Paragon.
6. After the Paragon database is downloaded, a prompt will appear for an administrator’s username and password. Enter an administrator username and password.
7. Select “Save” on the “File” menu, and save the Paragon Configuration database to the hard disk.
8. Select “Exit” on the “File” menu to exit the Paragon OverView program.

Paragon Firmware Update Instructions

1. Download the Paragon Firmware distribution file (ParagonFirmware.zip), available at the Raritan web site: <http://www.raritan.com>.
2. Unzip the downloaded file, and read the release notes for any additional or updated instructions.

Update User Station(s)

3. On any active Paragon User Station (p/n UST1), log into Paragon, and press <F12> to bring the on-screen user display to **Selection Menu by Name** (and not simply, “Selection Menu”).
4. With the Paragon User Station displaying **Selection Menu by Name**, connect one end of a straight-through serial cable to the port labeled “Admin” (DB9F) on the back of the User Station. Connect the other end of the cable to the serial port of any computer with Paragon Update installed.

Note: To ensure reliable communication, use as short a serial cable as possible. Do not use a serial cable longer than 50 feet in length. Be sure to use a straight-through serial cable, and not a null modem cable.

5. On the attached computer, launch Paragon Update by double-clicking the icon.
6. Select the correct serial port (COM1 through COM4), and click <Activate Port> to initiate communication with Paragon.
7. Click <Load Hex File> and select the User Station firmware contained in the Paragon Firmware distribution file (e.g. “UST1-####”, where #### is a hexadecimal version number). The first button found in the “Upgrade Information” section of the window should change to “Paragon User Station”.
8. Click <Test Hex File> to ensure file integrity.
9. Click <Check Device Information> to confirm successful communication with the Paragon User Station, and to confirm that the firmware upgrade is applicable.
10. Click <Paragon User Station> to begin uploading the firmware.

Note: During the firmware uploading process, the User Station and the computer must be powered ON, and the serial cable must remain firmly connected.

11. Click <Disable Port>, and exit Paragon Update.
12. After successfully receiving the new firmware, the User Station will reset automatically—a beep will signal the reset.

Note: If automatic reset of the User Station does not occur, then recycling power to the User Station will manually reset the unit. No loss of data will occur by resetting power to the user station.

13. Repeat steps 3 through 12 for each User Station to be updated, clicking <Disable Port> and exiting Paragon Update after updating each User Station.

Update Paragon Matrix Switching Unit(s)

14. Connect one end of a straight-through serial cable to the port labeled "Admin" (DB9F) on the back of the Paragon Matrix Switching Unit (UMT8) to be updated. Connect the other end of the cable to the serial port of any computer with Paragon Update installed.

Note: To ensure reliable communication, use as short a serial cable as possible. Do not use a serial cable longer than 50 feet in length. Be sure to use a straight-through serial cable, and not a null modem cable.

15. On the attached computer, launch Paragon Update by double-clicking the icon.
16. Select the correct serial port (COM1 through COM4), and click <Activate Port> to initiate communication with Paragon.
17. Click <Load Hex File> and select the Matrix Switch firmware contained in the Paragon Firmware distribution file (e.g. "UMT8-####", where #### is a hexadecimal version number). The first button found in the "Upgrade Information" section of the window will change to "Send to Paragon".
18. Click the <Test Hex File> button to ensure file integrity.
19. Click <Check Device Information> to confirm successful communication with the Paragon Matrix Switching unit, and to confirm that the firmware upgrade is applicable.
20. Click <Send to Paragon> to begin uploading the firmware.

Note: During the firmware uploading process, the User Station and the computer must be powered ON, and the serial cable must remain firmly connected.

21. Click <Disable Port>, and exit Paragon Update.
22. Using the power switch located on the back of the unit, recycle power to the Paragon Matrix Switching unit. The front LCD screen will display the latest firmware version number.
23. Repeat steps 14 through 22 for each Paragon Matrix Switching unit to be updated, clicking <Disable Port> and exiting Paragon Update after updating each Matrix Switching unit (UMT8).

Appendix I: IBM x330

Paragon UMT8 firmware 2B1 and UST1 firmware 2K10 or higher supports an IBM x330 chain of computers as a second tier by utilizing IBM's Cable Chaining Technology (C2T) technology and Raritan Computer Interface Modules (CIMs) — UKVMP-x330 or UKVMC-x330. An IBM x330 rack of up to 42 servers can be accommodated per Paragon UMT8 channel port. This Paragon feature lets users name each x330 server in the rack and see that name in a Paragon Selection Menu, instead of utilizing blind x330 shortcut key switching techniques.

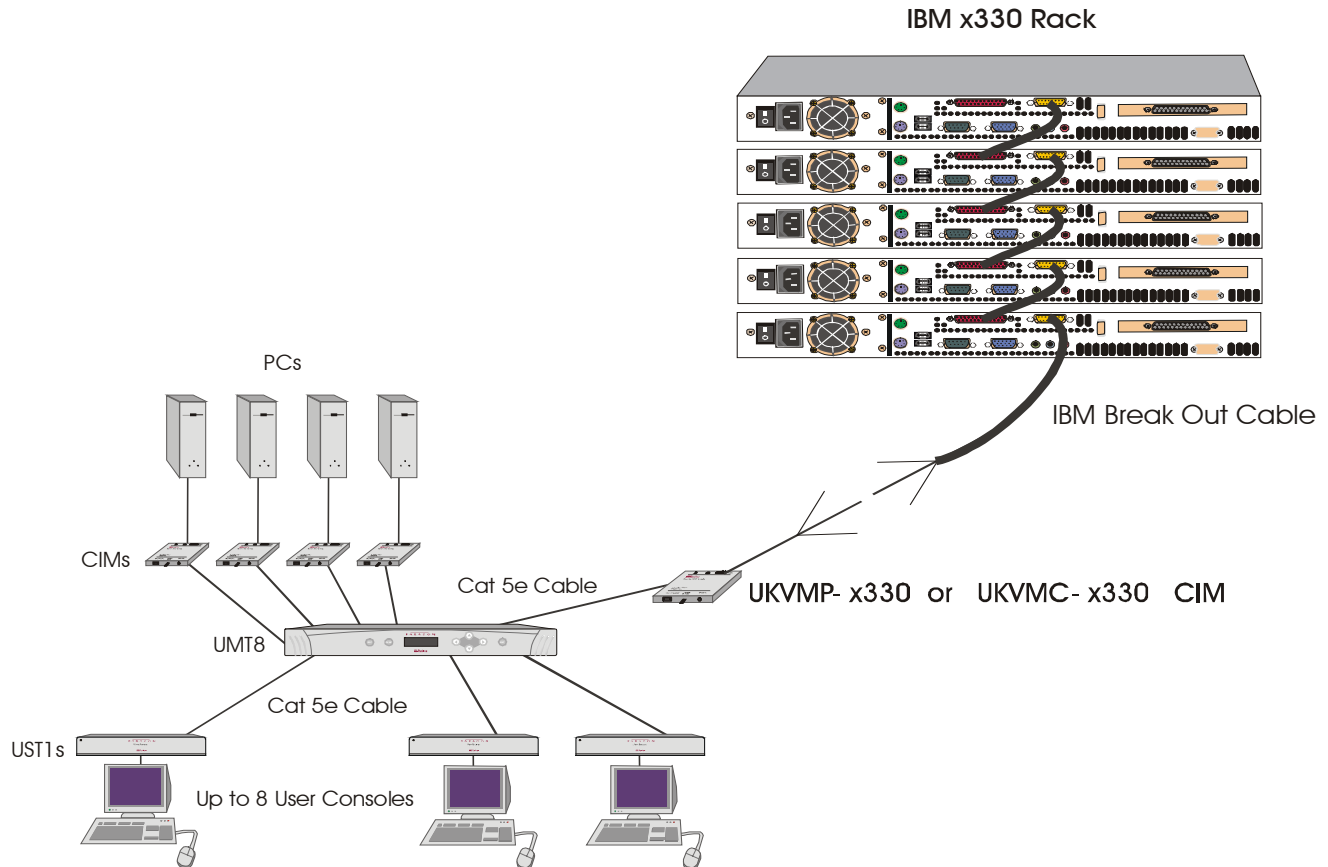


Figure 60 IBM x330 Tiered from a Paragon UMT8

Installing an IBM x330 Rack of Servers as a Tier to Paragon

2. Set up Paragon as per Basic Installation instructions, reserving one channel port for each rack of IBM x330 servers to be connected.
3. Connect a Category 5e UTP cable to the reserved channel port on the back of the UMT8.
4. Connect the other end of the category 5e UTP cable to the RJ45 port on a Raritan CIM — UKVMP-x330 or UKVMC-x330.
5. Attach CIM to IBM Break Out Cable from the x330 rack:
 - UKVMP-x330: Connect keyboard, monitor, and mouse cable legs attached to CIM to appropriate 15-pin female video port and 6-pin mini-DIN mouse and keyboard ports on IBM Break Out Cable.
 - UKVMC-x330: Connect DB25 male end of CCPnn cable to DB25 female port on UKVMC-x330. Connect the other end of the CCPnn cable to appropriate 6-pin mini-DIN mouse and keyboard ports, and HD15 video port on IBM Break Out Cable.

Channel Configuration

1. Set the IBM x330 rack as a second tier device.

- From a User Station, Login as “*admin*” or your user name if you have administrator privileges.

Note: The default password for the login “*admin*” is “*ravitan*” (all in lower case).

- Press <F5> to go the **Administration Menu**. Select **Channel Configuration** submenu.
 - Use <PageUp>, <PageDown>, <↑> and <↓> keys to select channel where the IBM x330 rack is connected.
 - <Tab> to **Device** field. Highlight will be yellow. Hit <Enter> and highlight will turn green. Use the <↑> or <↓> keys to change device type to IBM x330. Hit <Enter> and highlight turns yellow.
 - Press <Shift/Tab> to go back to **Name** column. Press <Enter> Edit default name.
 - Press <S> to save the new configuration.
7. Press <F2> to go **Selection Menu** to validate that second-tier IBM x330 rack is properly configured. Select and switch to one of the IBM x330 channels. Normal computer access and operation indicates a successful connection.
 8. Press <F5> to go to **Administration Menu**. Select **Channel Configuration** submenu. Select the IBM x330 channel. Press <G> to bring up a **Channel Configuration** menu of the IBM x330. Edit names for each IBM x330 server in the rack.
 9. Press <S> to save the new configuration.

Appendix J: Rack Mount Brackets – RUMT & RUST

Mounting brackets for Paragon 1U components —UMT8 or UST1—can be purchased separately for convenient rack mount installation:

Part Number	Description
RUMT-1U	19" Rack Mount Bracket for UMT8 (1U) [for serial numbers that begin with CP]
RUST-1U	19" Rack Mount Brackets for UST1 (1U)

Each of these rack mount brackets can be mounted as either a forward mount or a reverse mount. Forward mount offers access to the front panel of the unit. Reverse mount offers access to the back panel ports of the unit, where cables are connected.

Forward Mount Installation

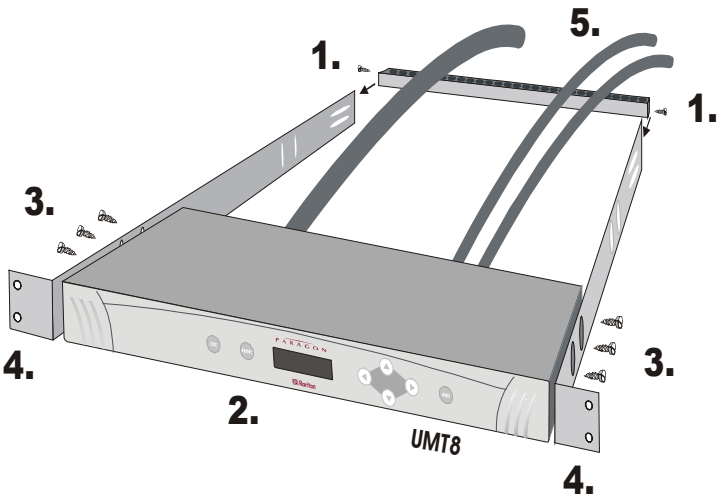


Figure 61. Forward Mount of UMT8 – Rack p/n RUMT-1U

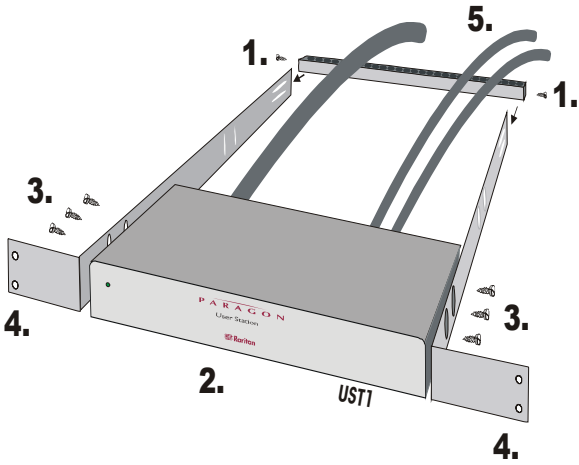
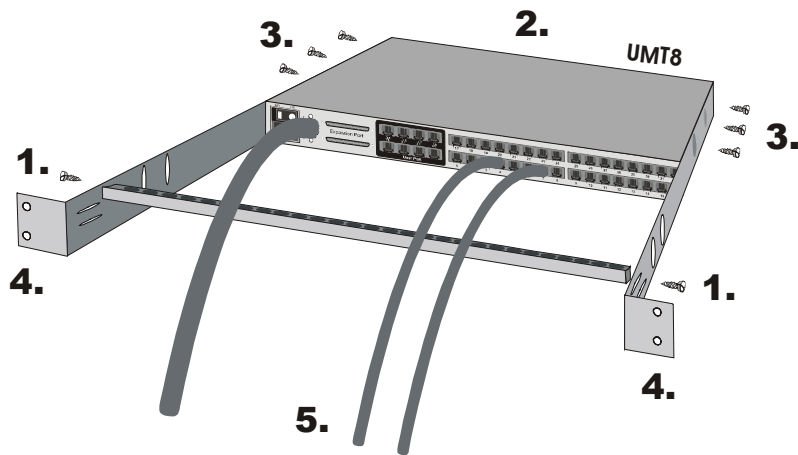
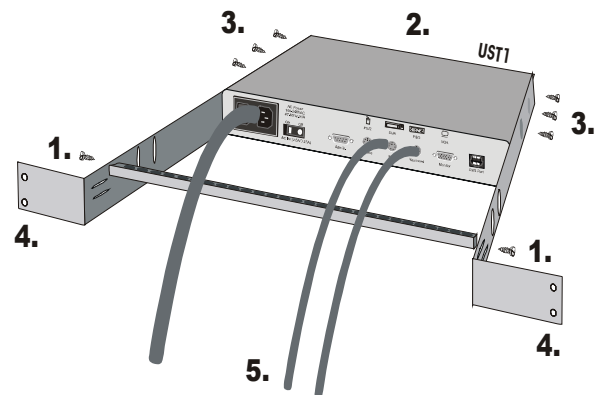


Figure 62. Forward Mount of UST1 – Rack p/n RUST-1U

1. Secure cable support bar to rear of side brackets, opposite from the rack mount tabs.
2. Slide UMT8 or UST1 between the two side brackets, at the front end near the rack mount tabs. The front of the UMT8 or UST1 should be flush with the front of the side brackets at the rack mount tabs.
3. Secure UMT8 or UST1 to side rack mount brackets with 3 screws on each side.
4. Secure entire assembly to rack at rack mount tabs.
5. Drape cables over cable support bar.

Reverse Mount Installation

**Figure 63.** Reverse Mount of UMT8 – Rack p/n RUMT-1U**Figure 64.** Reverse Mount of UST1 – Rack p/n RUST-1U

1. Secure cable support bar to front of side brackets, near rack mount tabs.
2. Slide UMT8 or UST1 between the two side brackets, at the rear end opposite the rack mount tabs. The front of the UMT8 or UST1 should be flush with the back of the side brackets.
3. Secure UMT8 or UST1 to side rack mount brackets with 3 screws on each side.
4. Secure entire assembly to rack at rack mount tabs.
5. Drape cables over cable support bar.

Appendix K: UTP Cabling FAQs

Question:

What UTP cable does Raritan recommend for use with Paragon®, Paragon Ready™, and Cat5 Reach™ products?

Answer:

Raritan certifies the following Category 5e UTP and Category 6 UTP cable products for use with its family of industry-leading data center solutions:

Certified Cables for Use with Raritan Products

Category 5e UTP Cables:	Belden DataTwist 350 UTP	#1700A	Solid
	Belden DataTwist 350 patch	#1752A	Stranded
Category 6 UTP Cables:	Belden MediaTwist	#1872A	Solid

Use of non-certified cabling can and will result in video and data degradations that users may find unsatisfactory. Certified Raritan cable products listed above are widely available and competitively priced. When using certified cable, users can transmit video signals at distances up to 1,000 feet at 1024x768 @75Hz; and up to 600 feet at 1600x1200 @75Hz.

Note that Raritan does not have any marketing relationship with Belden, nor does Raritan receive any financial incentive for recommending Belden products.

Can I use plain Cat 5 cable, instead of Cat 5e?

Yes, however, you may not get the same performance as you would with Raritan certified Category 5e UTP or Category 6 UTP cables. Standard Category 5 UTP cable may not have the necessary characteristics for transmitting high-quality video over long distances.

Can I use standard Ethernet (10BASE-T) cable?

No. Standard Ethernet cable does not have the necessary bandwidth characteristics for transmitting high-quality video over long distances.

Can I use non-certified Cat 5e cable?

Yes, however, you may not get the same performance as you would with Raritan certified Category 5e UTP or Category 6 UTP cables. Using non-certified Category 5e UTP cable with Raritan products results in degraded video performance ranging from mildly irritating to severely unusable.

The only occasion when a non-certified cable may be used with Raritan products without negative effects on system usability is when the total cable distance between any user console and any connected device is less than 300 feet.

Because cable products certified by Raritan do not cost more than competing cable offerings, Raritan strongly recommends that users utilize Raritan certified cables for maximum performance with Raritan product applications.

Can I use Cat 6 cable?

Yes. Currently only one Category 6 UTP cable product is Raritan certified for use with Raritan products. Raritan continues to test new Category 6 UTP cabling products as they are released to the market. However, at the present time, no Category 6 standard currently exists; all products currently available in the marketplace claiming to be Category 6 UTP cable actually conform to a *proposed* standard, not an established one. As a result, great variation in cable types and performance exist.

What happens if I do not use Raritan certified cable?

Cable products that are not specifically certified by Raritan will likely cause your video to look blurry; in particular if the video signal is of high-resolution, or if the video signal must be transmitted over long distances. Furthermore, LCD monitors can become unusable

Question:

Cat 5e is standardized. Why can't I simply use *any* Cat 5e cable with Raritan products?

Answer:

Because the intended application of UTP cabling is the transmission of digital data, cable specifications are optimized for that application. However, because video data is by its very nature analog, Raritan's exclusive technology – which enables such high-bandwidth video information to be transmitted over relatively thinly-shielded Category 5 UTP and Category 6 UTP cables – requires even stricter tolerances for certain cable properties.

One particular UTP cable characteristic has a large impact on how well your Raritan system performs: delay skew. UTP cabling consists of four “twisted pairs” of wire, each carrying one set of data. In order to minimize cross-interference between the pairs, each pair must be twisted at slightly different rates (twists/foot). Over long lengths of cable, however, slight differences in twist rates results in measurably different rates of data transmission among each twisted pair. The arrival time delta is called “delay skew.”

How does this affect your Raritan solution? Raritan products send red, green, and blue video information each over a different twisted pair; if that information does not arrive at the same time, observed video will be blurry. Raritan's unique algorithms correct for this behavior, but physical limitations create upper limits to the success of any algorithm.

The TIA/EIA specification for delay skew tolerance is 45 nanoseconds for Category 5 UTP and Category 5e UTP cable. However, in analog video applications, a delay skew longer than 15 nanoseconds usually results in inadequate video performance at high resolutions (XGA and higher).

Raritan-certified cable products happen to surpass the acceptable tolerances of the TIA/EIA's specification for delay skew, and hence are best suited for connecting Raritan components.

Are there special pin out requirements that I must use?

Yes.

**Category 5e Unshielded Twisted Pair (UTP) Cable Mod Plug Requirements
For use with Raritan Category 5e UTP Products**

<u>T568A</u>			<u>T568B</u>			
		<u>Mod Plug Positions</u>			<u>Mod Plug Positions</u>	
Cat 5e Cable	R	White/Green	1	R	White/Orange	1
	J	Green	2	4	Orange	2
	4	White/Orange	3	5	White/Green	3
	5	Blue	4	C	Blue	4
	O	White/Blue	5	O	White/Blue	5
	N	Orange	6	N	Green	6
	E	White/Brown	7	E	White/Brown	7
	C	Brown	8	C	Brown	8

Figure 65. Cable Pin-out Requirements

Appendix L: Specifications

Item	Dimensions (WxDxH)	Weight	Power	Operating Temp.
UMT8	17.2" (W) x 10.4" (D) x 1.75" (H) 437mm (W) x 265mm (D) x 44 mm (H)	7.3lbs. (3.3kg.)	100V/240V 50/60Hz, 7VA	0-40 C 32-104 F
UST1	11.4" (W) x 10.1" (D) x 1.75" (H) 290mm (W) x 255mm (D) x 44 mm (H)	4.3lbs. (1.9kg.)	100V/240V 50/60Hz, 5VA	0-40 C 32-104 F
CIMs for PCs				
<u>UKVMC</u> Connect one PC — with KVM ports for local access	4.3" (W) x 3.6" (D) x 1.0" (H) 108mm (W) x 91mm (D) x 23mm (H)	0.7lbs. (0.3kg.)	6VDC	0-40 C 32-104 F
<u>UKVMP</u> Connect one PC	2.0" (W) x 3.125" (D) x 1.125" (H) 51mm (W) x 79mm (D) x 29mm (H)	0.4lbs. (0.16kg.)	None	0-40 C 32-105 F
<u>UKVMP2</u> Connect one PC — expand to 16 users	2.44" (W) x 3.5" (D) x 1.0" (H) 62mm (W) x 89mm (D) x 27mm (H)	0.4lbs. (0.16kg.)	None	0-40 C 32-106 F
<u>UKVMPD</u> Connect one PC — with "DirectConnect" Technology	1.68" (W) x 3.5" (D) x 0.75" (H) 43mm (W) x 89mm (D) x 19mm (H)	0.4lbs. (0.16kg.)	None	40 C 32-107 F
CIMs for Sun				
<u>USKVMC</u> Connect one Sun Computer — with KVM port for local access	4.3" (W) x 3.6" (D) x 1.0" (H) 108mm (W) x 91mm (D) x 23mm (H)	0.7lbs. (0.3kg.)	6VDC	0-40 C 32-108 F
<u>USKVMP</u> Connect one Sun Computer — with HD15 video	2.0" (W) x 3.125" (D) x 1.125" (H) 51mm (W) x 79mm (D) x 29mm (H)	0.4lbs. (0.16kg.)	None	0-40 C 32-109 F
<u>USKVMPD</u> Connect one Sun Computer — with "DirectConnect" Technology	1.68" (W) x 3.5" (D) x 0.75" (H) 43mm (W) x 89mm (D) x 19mm (H)	0.4lbs. (0.16kg.)	None	0-40 C 32-110 F
<u>USKVMPA</u> Connect one Sun Computer — with 13W3/composite sync video — USKVMP + Adapter	2.0" (W) x 3.125" (D) x 1.125" (H) 51mm (W) x 79mm (D) x 29mm (H) (x 2 units — USKVMP + Adapter)	0.7lbs. (0.3kg.)	None	0-40 C 32-111 F

CIMs for ASCII Devices AUATC <i>Connect one ASCII device — with KV ports for local access</i>	<div>4.3" (W) x 3.6" (D) x 1.0" (H)</div> <div>108mm (W) x 91mm (D) x 23mm (H)</div>	0.7lbs. (0.3kg.)	6VDC	<div>0-40 C</div> <div>32-112 F</div>
CIMs for USB AUPUSBC <i>Connect one USB— with KVM ports for local access</i> UUSBP <i>Connect one USB Computer</i> UUSBPD <i>Connect one USB Computer — with "DirectConnect" Technology</i>	<div>4.3" (W) x 3.6" (D) x 1.0" (H)</div> <div>108mm (W) x 91mm (D) x 23mm (H)</div> <div>2.0" (W) x 3.125" (D) x 1.125" (H)</div> <div>51mm (W) x 79mm (D) x 29mm (H)</div> <div>1.68" (W) x 3.5" (D) x 0.75" (H)</div> <div>43mm (W) x 89mm (D) x 19mm (H)</div>	0.7lbs. (0.3kg.) 0.4lbs. (0.16kg.) 0.4lbs. (0.16kg.)	6VDC None None	<div>0-40 C</div> <div>32-113 F</div> <div>0-40 C</div> <div>32-114 F</div> <div>0-40 C</div> <div>32-115 F</div>

Specifics for Installation of CIM – Connecting CIM & Server:

UKVMC

Connect DB25 male end of provided CCPnn cable to DB25 female port on UKVMC. Connect other end of cable to 6-pin mini DIN keyboard and mouse ports and female 15-pin video port on the computer.

UKVMP & UKVMP2

Connect keyboard, monitor, and mouse cable legs attached to UKVMP or UKVMP2 to appropriate 15-pin female video port and 6-pin mini-DIN mouse and keyboard ports on the computer.

UKVMPD

Attach the CIM to the computer via its 15-pin male video port, connecting it to the 15-pin female video port on the computer. Connect keyboard, and mouse cable legs attached to UKVMPD to appropriate and 6-pin mini-DIN keyboard and mouse ports on the computer.

USKVMC

Connect DB25 male end of CCSnn cable to DB25 female port on USKVMC. Connect other end of cable to 8-pin mini DIN keyboard/mouse port and 13W3-pin video port on the Sun.

USKVMP

Connect keyboard, and mouse cable legs attached to USKVMP to appropriate 15-pin female video port and 8-pin mini DIN keyboard/mouse port on the Sun.

USKVMPD

Attach the CIM to the computer via its 15-pin male video port, connecting it to the 15-pin female video port on the computer. Connect keyboard, and mouse cable legs attached to USKVMPD to appropriate and 8-pin mini-DIN keyboard/mouse port on the Sun.

USKVMPA

The USKVMPA CIM, for Sun Computers with 13W3/composite sync video, consists of a USKVMP CIM plus an AVGACS Adapter. Take the AVGACS adapter and connect its 13W3 video connector to the 13W3 video port on the Sun. Connect the AVGACS's 8-pin mini-DIN male keyboard/mouse leg to the female keyboard/mouse port on the Sun. Connect the AVGACS's 8-pin mini-DIN female keyboard/mouse leg to the male 8-pin mini-DIN keyboard/mouse leg on the USKVMP. Connect the USKVMP's male HD15 video connector to the female HD15 port on the AVGACS.

AUATC

Connect DB25 male end of provided null modem cable to DB25 female port on AUATC. Connect other end of cable to the serial port on the computer.

Connect DC6500U power adapter to DC power port on AUATC and plug into AC power supply.

AUPUSBC

Connect DB25 male end of CCUSBnn cable to DB25 female port on AUPUSB. Connect other end of cable to one of the USB ports and 15-pin video port on the computer.

UUSBP

Connect HD15 video leg attached to UUSBP appropriate 15-pin female video port on the computer. Connect the UUSBP's USB leg to appropriate USB port on computer.

UUSBPD

Attach the CIM to the computer via its 15-pin male video port, connecting it to the 15-pin female video port on the computer. Connect the UUSBPD's USB leg to appropriate USB port on computer.

UTP Cables

Recommended UTP cable:

Category 5e UTP Cables:	Belden DataTwist 350 UTP	#1700A	Solid
	Belden DataTwist 350 patch	#1752A	Stranded
Category 6 UTP Cables:	Belden MediaTwist	#1872A	Solid

Pin-out specifications for RJ45 connectors to Category 5e UTP cable:

- Paragon supports only T568A or T568B pin-outs (Figure 66)

Maximum distance from user console to computer is 1,000 feet. When using certified cable, users can transmit video signals at distances up to 1,000 feet at 1024x768 @75Hz; and up to 600 feet at 1600x1200 @75Hz.

See **Appendix K: UTP Cabling FAQs** for more information.

CIM Cable Kits - For UKVMC - Additional cables available for desired distances longer than those enabled by the standard length cables provided with each CIM unit ordered.

Universal Cable Kits: For connecting computer to CIM

Part No.	Length	Connectors
CCP20	6.5' (2 M)	DB25(M) TO HD15(M), 2x mini-DIN6(M)
CCP40	13' (4 M)	DB25(M) TO HD15(M), 2x mini-DIN6(M)
CCP60	20' (6 M)	DB25(M) TO HD15(M), 2x mini-DIN6(M)
CCP90	30' (9 M)	DB25(M) TO HD15(M), 2x mini-DIN6(M)

Universal Cable Kit adapters for AT-style keyboard and serial mouse: (1) DIN 6F to DIN 5M and (1) DIN 6F to DB9F can be order for any CCPdd cable (part number: APSAT)

Accessories

RPAR1U	19" Rack Mount Bracket (for UMT8) — 1U [for serial numbers beginning with CM]
RUMT-1U	19" Rack Mount Bracket (for UMT8) — 1U [for serial numbers beginning with CP]
RUST-1U	19" Rack Mount Bracket (for UST1) — 1U
ASOGVGA	Sync on green converter for HP9000 or SGI with HD15 video
ASGIVGA	Sync on green converter for SGI with 13W3 video
ARSVGA	Sync on green converter for RS/6000 with 13W3 video

Category 5e Unshielded Twisted Pair (UTP) Cable Mod Plug Requirements For use with Raritan Category 5e UTP Products

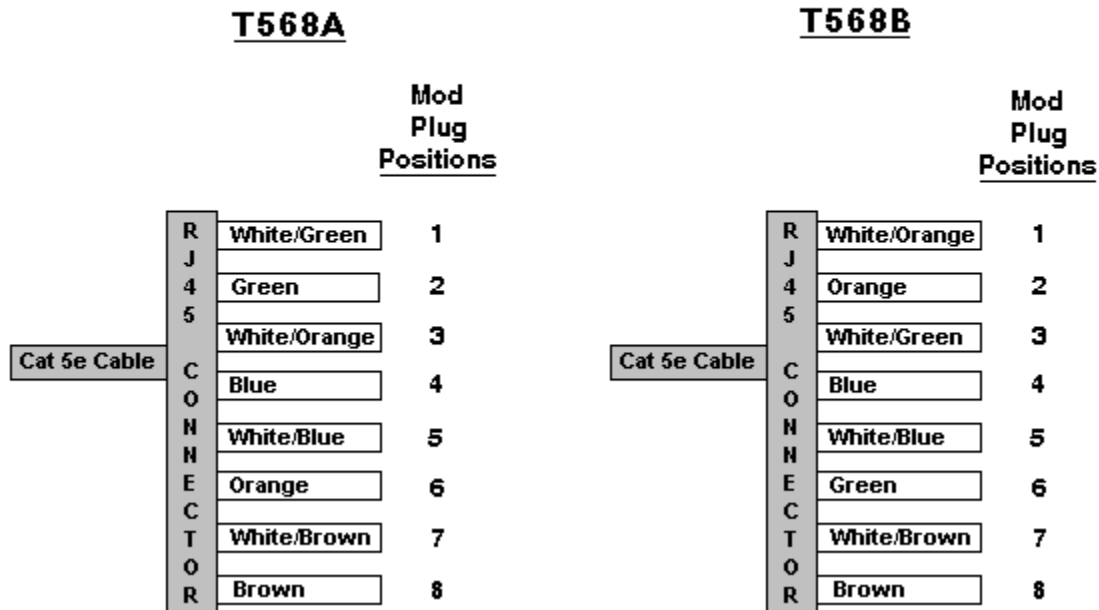


Figure 66. Paragon Category 5e UTP Cable Pin-out Requirements

Appendix M: Troubleshooting

SYMPTOM	PROBABLE CAUSE
No Power.	<ul style="list-style-type: none"> ➤ Loose Power Cord. ➤ Power switch is off. ➤ UMT8 or UST1 surge protection invoked during a power recycling process. Power off unit, wait 20 seconds, then power unit on.
All computers have no video display.	<ul style="list-style-type: none"> ➤ Loose Category 5e UTP cable ➤ Loose monitor connection ➤ UST1 is connected and functioning properly if <NumLock> key lights keyboard's Num Lock LED.
Monitor video display for some connected computers is distorted.	<ul style="list-style-type: none"> ➤ Monitor type does not match video output designation from computer.
Keyboard non-functional, even though there is no keyboard error at power up. Cannot input to any computer.	<ul style="list-style-type: none"> ➤ Loose keyboard connection to UST1. ➤ Loose Category 5e UTP cable ➤ Keyboard broken. Hot-swap with a new keyboard
Repeated "KeyBoard ERROR" at computer power-up.	<ul style="list-style-type: none"> ➤ Loose cable from computer to CIM ➤ Loose Category 5e UTP cable ➤ Paragon components may be out of order. Verify that computer works with a keyboard directly connected. Contact Raritan Technical support for assistance.
Keyboard suddenly locks-up when a particular computer is selected, but works normally when other computers are selected.	<ul style="list-style-type: none"> ➤ Loose keyboard cable connection ➤ Voltage spike (increase) or brown out (decrease) in power supply to connected UMT8 unit. Power down UMT8, wait 20 seconds, then power on unit. Powering UMT8 from a UPS avoids variation in power supply to UMT8.
Repeated "MOUSE INSTALLATION FAILURE" at computer power-up.	<ul style="list-style-type: none"> ➤ Loose mouse cable from computer to CIM ➤ Loose Category 5e UTP cable ➤ If error occurs only with new computers being added to system: Contact Raritan Technical Support for assistance – mouse emulation firmware may need to be upgraded for compatibility with newer computers.
Mouse suddenly locks-up when a particular computer is selected, but works normally when other computers are selected.	<ul style="list-style-type: none"> ➤ Loose cable from computer to CIM ➤ Loose Category 5e UTP cable ➤ Paragon components may be out of order. Verify that computer works with a mouse directly connected. Contact Raritan Technical support for assistance.
On-Screen User Interface (OSUI) non-functional.	<ul style="list-style-type: none"> ➤ Replace keyboard. OSUI works only with PS/2 or extended AT-style keyboards.
Video is "fuzzy" or out of focus.	<ul style="list-style-type: none"> ➤ Video Gain Adjustment is required (especially needed with LCD flat panel monitors). ➤ Activate OSUI (by hitting <ScrollLock> key twice rapidly). ➤ Use numeric keypad "+" and "-" keys to adjust video image until in focus.

Glossary

Active Channel	A channel is active when a connected device is powered on. See also <i>Channel</i> .
Administration Menu	For installing and configuring access to the Paragon. This menu is restricted to those with administrator privileges.
AutoScan	When activated, UST1 automatically cycles through channels, displaying each computer's video for a specified time interval.
AutoSkip	When activated, channel selection is restricted to active channels.
Base Unit	The UMT8 units to which computers and/or other MasterConsole units are connected in a two-tier configuration.
Channel	The RJ45 connector with which a device is connected to UMT8. There are 32 channels on model UMT8 units. See also Active Channel and Inactive Channel.
Channel Configuration Menu	For editing computer and device names, changing security classes, and assigning channel-specific scan rates.
Channel ID Number	The specific channel number to which a device is connected.
Channel-Specific Scan Rate (Individual)	Scan rate specified for each channel when Scan Mode field in User Profile is set to Individual. Channel-specific scan rates are set in the Channel Configuration submenu of the Administration Menu. See also <i>Scan Rate</i> .
Class Security Code	Refers to the entire security code. See also <i>Security Code</i> .
Computer Name (Channel Name)	A label of up to 12 characters assigned by an administrator for a device connected to a Paragon channel.
Configuration	See <i>One-Tier Configuration</i> and <i>Two-Tier Configuration</i> .
Device	A computer, or UMT8, or any MasterConsole unit that is connected to a UMT8 channel.
Function Selection Screen	For accessing front panel control functions.
Global Scan Rate	Scan rate used for all channels when Scan Mode field in User Profile is set to Global. See also <i>Scan Rate</i> .
Green Mode	A field in User Profile Menu for toggling PowerSave feature on and off.
Group Security Code	Refers to how many belong to a code. See also <i>Security Code</i>
Hot Key	For activating On-Screen User Interface (OSUI). To activate the OSUI, press the Hot Key -default <ScrollLock> - twice rapidly.

ID Display	A single-line display shown on monitor to identify selected channel.
Inactive Channel	A channel is inactive if no device is connected to it or if connected device is powered off. See also <i>Channel</i> .
Key Number	Located in left-hand column of Selection Menu. To quickly select a channel, press its corresponding key number on keyboard when Selection Menu is displayed.
LCD Display	Liquid-crystal display screen on UMT8's front panel for displaying statuses and controlling administrative functions.
Local Console	Keyboard, monitor, and mouse (user console) plugged into local CIM port.
Login	Entering a user name to gain access to the Paragon system.
Login Screen	For Login to system as a user or administrator.
Logout	Disconnects a user from system.
Menu	A Paragon On-Screen User Interface (OSUI) display.
Menu F Keys	Function keys for On-Screen User Interface (OSUI) menus.
Normal Display	Displayed on LCD. Shows operating status of UMT8.
One-Tier Configuration	Only computers are connected directly to base UMT8 units.
Password	Used in conjunction with user name to gain access to Paragon.
PowerSave	Allows a properly equipped monitor to operate in energy save mode. See also <i>Green Mode</i> .
Public View	Feature that controls video sharing of a computer that is being selected and operated by another user.
Reserved Channels	In a two-tier configuration, channels on base UMT8 units allocated to connect second-tier non-computer devices.
S Model	MasterConsole II models MasterConsole S-4 & MasterConsole S-8.
Scan	On-Screen User Interface (OSUI) function for activating AutoScan.
Scan Mode	Field in User Profile. Can be set to either Global or Individual.
Scan Rate	Time interval –in seconds- that a channel's computer is to remain displayed on monitor when AutoScan is activated. See also <i>Global Scan Rate</i> and <i>Channel Specific (Individual) Scan Rate</i> .
Security Code	Number set assigned to each user and computer to establish user-access rights. See also <i>Class Security Code</i> , and <i>Group Security Code</i> .
Selection Menu	For selecting and accessing a computer or device.
Set LCD Contrast Screen	For adjusting contrast of LCD on UMT8 front panel.

Set-Password Screen	Enables administrator to password protect functions on the LCD.
Set Tier Screen	For connecting second-tier user ports to first-tier channels.
Sort	Order of channels listed in the Selection Menu –either by channel ID or by name. Pressing F12 toggles the sort criterion when a Selection Menu is displayed.
Start-Up Display	Displayed on LCD when UMT8 is powered on – system checks for the status of computers and user connections. After this start-up test, system goes to normal display.
System Configuration	For allowing and disallowing blank passwords, turning Time Out on and off, changing Time Out interval, turning Login Screen on and off, and changing Login interval.
Time Out	Length of time that a user port can remain idle –that is, since the previous keyboard/mouse or front panel operation – before connected console is automatically logged out. User must enter an authorized user name to re-establish access after Time Out.
Two-Tier Configuration	A mix of devices – computers, other units and MasterConsole units- are connected to base UMT8 units.
User Configuration	Used by administrator for adding, deleting, and changing user names, security codes, and administrator privileges.
User Console	Keyboard, monitor, and mouse plugged into a user port on UST1 back panel.
User Name	Name a user types to login to the system.
User Port	The RJ45 connector by which a user station, UST1, is connected to a UMT8.
User Profile	For setting and changing user passwords and preferences.
X Model	MasterConsole II models MasterConsole X-4, MasterConsole X-8, and MasterConsole X-16.

